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The regime change and social inequality

Educational and job careers in the Soviet and post-Soviet Era

Yuliya Kosyakova

Thesis submitted for assessment with a view to
obtaining the degree of Doctor of Political and Social Sciences
of the European University Institute

Florence, April, 2016

European University Institute
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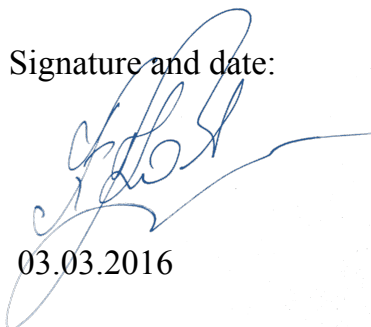
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Abstract

The collapse of the Soviet Union and subsequent rapid shifts in economic, political, and social institutional arrangements – labeled here as a “regime change” – offer a unique opportunity to explore how patterns of social inequality vary across broader institutional contexts and over time. How the stratification order between different social groups has changed in the aftermath of the regime change in Russia is a central question I raise in this thesis. In contrast to prior research, I draw on a life-course perspective and address several rather untouched aspects of social inequalities in Soviet and post-Soviet societies and investigate them in terms of school-to-work and work-to-school transitions in the earlier and later life courses. Empirically, I employ powerful longitudinal data from the Education and Employment Survey for Russia (EES) linked to the Russian Gender and Generation Survey (GGS), which cover life trajectories in a time-frame between 1965 and 2005. Compared with previous studies, that data enable me to utilize a much larger observation window to scrutinize long-term consequence of the regime change in Russia.

First, I tackle social inequality in terms of horizontal gender differences and vertical gender inequalities upon labor market entry. My findings reveal that despite proclaimed equality principles, the school-to-work transition was by no means gender-neutral in Soviet Russia, with women facing a net vertical disadvantage in job authority. This inequality has increased even more since the collapse of the Soviet Union, particularly due to worsening chances for female entrants. Second, I explore inequality of adult-educational opportunity due to initial educational level and occupational position. My results suggest that selective participation in adult education might lessen or exacerbate inequality of adult-educational opportunity depending on type of adult education and analyzed group of participants. Nonetheless, the collapse of the Soviet Union has contributed to inequality of adult-educational opportunity, thereby strengthening the exacerbation effects of adult education on social inequalities. Third, I investigate whether participation in adult education may improve career opportunities, thereby mitigating social inequalities that emerged in the earlier life course. My findings show that adult education either benefits all participants or those who are already advantaged. Overall, the results point to a mechanism of persistence or reinforcement of social inequalities. Furthermore, returns to adult education have decreased or been not offset since

the collapse of the Soviet Union. Finally, throughout my thesis I put a particular focus on gender. Altogether, my findings unravel noteworthy gender inequalities arising in the initial career stages. These initial (dis-)advantages cumulate over men's and women's life courses, thereby contributing to overall social inequality in Russia, and specifically during the post-Soviet period. I conclude that the regime change was accompanied by a widening of pre-existing social distances and an effective amplification of the Russian society's stratification order.

To Aleksander

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List of publications

This thesis is a work of independent research. In accordance with §9.2 of the ‘Academic rules and regulations for the doctoral and master’s programmes’ at the European University Institute (as amended by academic council decision N° 2 of 10 December 2014), the thesis contains my own account of my investigations. It has not previously been published in full. Earlier versions of some of the contents of this thesis appear in the following publications:

Articles in peer-reviewed journals

- Dämmrich, J., Kosyakova, Y., and Blossfeld, H.-P. (2016). Gender and job-related non-formal training: A comparison of 20 countries. In: *International Journal of Comparative Sociology*, (published online January 19, 2016).
- Kilpi-Jakonen, E., Vono de Vilhena, D., Kosyakova, Y., Stenberg, A., and Blossfeld, H.-P. (2012). The Impact of Formal Adult Education on the Likelihood of Being Employed: a Comparative Overview. In: *Studies of Transition States and Societies*, 4 (1), S. 48–68.
- Kosyakova, Y. (forthcoming). Cumulation or compensation? Adult education, labour market returns, and social inequalities in Soviet and Post-Soviet Russia. Submitted to: *Advances in Life Course Research*. (Current status: Revise and Re-Submit).
- Kosyakova, Y. (forthcoming). Inequality of adult-educational opportunity and regime change in Russia. In preparation process for submission in: *European Sociological Review*.
- Kosyakova, Y., Dämmrich, J. and Saar, E. (forthcoming). Institutional change and gender inequalities at labour market entry: A comparison of Estonia, Russia and East and West Germany. Submitted to: *Acta Sociologica*. (Current status: Under Review).
- Kosyakova, Y., Kurakin, D., and Blossfeld, H.-P. (2015). Horizontal and Vertical Gender Segregation in Russia – Changes upon Labour Market Entry Before and After the Collapse of the Soviet Regime. In: *European Sociological Review*, 31(5), 573-590.
- Kosyakova, Y., Dämmrich, J., and Blossfeld, H.-P. (2016). Participation in formal adult education and its impact on inequality over the life course in contemporary Russia. In: *World Studies in Education*, 17(1), (accepted for publication on February 1, 2016).
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- Vono de Vilhena, D., Kosyakova, Y., Kilpi-Jakonen, E., and McMullin, P. (2015). Does adult

education contribute to securing non-precarious employment? A cross-national comparison. In: *Work, Employment and Society*, 30(1), 97-117.

Chapters in edited volumes

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Kosyakova, Y., and Kurakin, D. (2015). Do Institutions Matter? Occupational Gender Segregation at Labor Market Entry in Soviet and Post-Soviet Russia. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (pp. 304-324). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

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Detailed content

ABSTRACT.....	I
ACKNOWLEDGEMENTS	V
LIST OF PUBLICATIONS	VII
DETAILED CONTENT	IX
LIST OF FIGURES	XVII
LIST OF TABLES	XIX
CHAPTER 1 INTRODUCTION AND RESEARCH QUESTIONS	1
1.1 THE “NATURAL EXPERIMENT” OF THE REGIME CHANGE IN RUSSIA	1
1.2 SOCIAL INEQUALITY AND REGIME CHANGE: THE MAIN RESEARCH QUESTIONS OF THIS THESIS 2	
1.3 LIFE-COURSE PERSPECTIVE ON SOCIAL INEQUALITY: EDUCATIONAL TRAJECTORIES BY AND DURING ADULTHOOD	5
1.4 CONCEPT AND OUTLINE OF THE STUDY	7
CHAPTER 2 THEORETICAL BACKGROUND: SOCIAL INEQUALITIES IN THE LIFE COURSE AND REGIME CHANGE	13
2.1 INTRODUCTION	13
2.2 THE LIFE COURSE AND SOCIAL INEQUALITY	14
2.2.1 <i>Inequality in educational opportunity in the earlier life course.....</i>	<i>14</i>
2.2.2 <i>Education as a life-long and life-wide process.....</i>	<i>17</i>
2.2.3 <i>Structural embeddedness of the stratification process</i>	<i>19</i>

2.3	MARKET TRANSITION AND SOCIAL INEQUALITY	21
2.3.1	<i>Social inequality under State Socialism.....</i>	22
2.3.2	<i>Transition to market: Decreasing social inequality?</i>	23
2.4	MARKET TRANSITION THEORY: A CRITICAL VIEW	25
2.4.1	<i>Empirical testing.....</i>	26
2.4.2	<i>Elaborations and extensions</i>	28
2.4.3	<i>Elite reproduction thesis</i>	28
2.4.4	<i>Selection effects.....</i>	30
2.4.5	<i>Interim summary</i>	31
2.5	SPECIFICITIES OF THE REGIME CHANGE EFFECT: A THEORY OF ELITE OPPORTUNITY ..	32
2.6	SOCIAL INEQUALITY AND REGIME CHANGE: EMPIRICAL EVIDENCE	35
2.6.1	<i>Class inequalities, educational opportunities and intergenerational mobility</i>	35
2.6.2	<i>School-to-work trajectories and intra-generational mobility.....</i>	37
2.6.3	<i>Gender inequalities</i>	39
2.7	GUIDING HYPOTHESIS: SOCIAL INEQUALITIES AND REGIME CHANGE IN RUSSIA	40
CHAPTER 3 RUSSIA DURING AND AFTER THE SOVIET ERA: THE ROLE OF INSTITUTIONS OVER THE LIFE COURSE.....		43
3.1	INTRODUCTION	43
3.2	MAIN CHARACTERISTICS OF THE SOVIET EDUCATIONAL SYSTEM.....	44
3.3	THE EDUCATIONAL SYSTEM AFTER THE COLLAPSE OF THE SOVIET UNION.....	47
3.3.1	<i>Continuity and change</i>	48
3.3.2	<i>The role of the certificates in the modern Russia</i>	51
3.4	THE EMPLOYMENT SYSTEM UNDER THE SOVIET REGIME.....	54

3.5	TOWARDS THE LABOR MARKET: LIBERALIZATION REFORMS AND POST-INDUSTRIAL RESTRUCTURING	55
3.6	UTILITARIAN PRINCIPLES OF THE SOVIET SOCIAL POLICY	57
3.7	GROWING INEQUALITY AND DEVELOPMENTS TOWARDS THE “LIBERAL WELFARE REGIME” AFTER 1991	58
3.8	THE INHERITANCE OF THE SOVIET “GENDER ORDER” IN CONTEMPORARY RUSSIA	61
CHAPTER 4 DATA AND METHODS.....		67
4.1	GENERAL DESCRIPTION.....	67
4.2	DATA PREPARATION AND MAJOR CODING STRATEGY	69
4.2.1	<i>The definition of the main analyses sample</i>	<i>70</i>
4.2.2	<i>The construction of variables used in the empirical analyses</i>	<i>72</i>
4.3	METHOD AND SOFTWARE.....	76
CHAPTER 5 HORIZONTAL AND VERTICAL GENDER INEQUALITIES AT LABOR MARKET ENTRY AND REGIME CHANGE		77
5.1	INTRODUCTION	77
5.2	THE HISTORICAL CONTEXT OF GENDER SEGREGATION IN RUSSIA	80
5.2.1	<i>The labor force participation of Soviet women and “gender equality”</i>	<i>80</i>
5.2.2	<i>The evolution of gender segregation after the regime change</i>	<i>83</i>
5.3	A THEORETICAL FRAMEWORK ON GENDER SEGREGATION UPON LABOR MARKET ENTRY 85	
5.3.1	<i>Naturalistic explanations.....</i>	<i>85</i>
5.3.2	<i>Cultural explanations.....</i>	<i>88</i>
5.3.3	<i>Explanation concerned with regime change.....</i>	<i>89</i>
5.4	RESEARCH DESIGN	91

5.4.1	<i>Risk sample</i>	91
5.4.2	<i>Analytical strategy</i>	92
5.4.2.1	Horizontal gender differences	92
5.4.2.2	Vertical gender inequalities	93
5.4.2.3	Independent variables	94
5.5	RESULTS	95
5.5.1	<i>Educational attainment upon labor market entry</i>	95
5.5.2	<i>Horizontal differences</i>	96
5.5.3	<i>Vertical inequalities</i>	98
5.5.3.1	Descriptive results	98
5.5.3.2	Multivariate results	99
5.5.3.3	Robustness check: factual and synthesized probabilities	105
5.6	DISCUSSION	109
CHAPTER 6 INEQUALITY OF ADULT-EDUCATIONAL OPPORTUNITY AND REGIME CHANGE		113
6.1	INTRODUCTION	113
6.2	NATIONAL CONTEXT	116
6.3	THEORETICAL FRAMEWORK ON PARTICIPATION IN ADULT EDUCATION	118
6.3.1	<i>Initial educational attainment</i>	119
6.3.2	<i>Occupational resources</i>	120
6.3.3	<i>Regime change</i>	121
6.3.4	<i>Gender</i>	123
6.4	RESEARCH DESIGN	124

6.4.1	<i>Risk sample</i>	125
6.4.2	<i>Method</i>	125
6.4.3	<i>Independent variables</i>	129
6.5	RESULTS	132
6.5.1	<i>Descriptive results</i>	132
6.5.2	<i>Multivariate results</i>	137
6.5.2.1	Upgrading	138
6.5.2.2	Sidestepping	142
6.6	DISCUSSION	145
CHAPTER 7 INEQUALITY IN RETURNS TO ADULT EDUCATION AND THE REGIME CHANGE		151
7.1	INTRODUCTION	151
7.2	CONTEXTUAL BACKGROUND	154
7.3	THEORETICAL FRAMEWORK ON RETURNS TO FORMAL (ADULT) EDUCATION	155
7.3.1	<i>Individual-level explanations</i>	156
7.3.2	<i>Gender differences</i>	157
7.3.3	<i>The influence of country-specific settings</i>	158
7.4	RESEARCH DESIGN	161
7.4.1	<i>Risk sample</i>	161
7.4.2	<i>Dependent variables</i>	161
7.4.3	<i>Transition-rate models</i>	163
7.4.4	<i>Independent variables</i>	165
7.5	RESULTS	167

7.5.1	<i>Descriptive results</i>	167
7.5.2	<i>Multivariate results</i>	170
7.5.2.1	Average returns to adult education	171
7.5.2.2	Returns to adult education and gender	173
7.5.2.3	Returns to adult education and social inequality	174
7.5.2.4	Returns to adult education and institutional change	178
7.5.2.5	Overall explanatory power of the models	180
7.5.3	<i>Robustness checks</i>	180
7.5.3.1	Modelling finishing adult education with credentials	180
7.5.3.2	Modeling possible selection into adult education	181
7.6	DISCUSSION	182
CHAPTER 8 CONCLUSIONS AND DISCUSSION		187
8.1	INTRODUCTION	187
8.2	SUMMARY OF CENTRAL FINDINGS	189
8.3	IMPLICATIONS OF THE RESEARCH	192
8.3.1	<i>Regime change and social inequality</i>	192
8.3.2	<i>Market Transition Debates</i>	193
8.3.3	<i>Importance of the structural and cultural context</i>	194
8.3.4	<i>Gender</i>	195
8.3.5	<i>Matthew effects</i>	197
8.3.6	<i>Education as a life-long process</i>	198
8.4	LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH	199
BIBLIOGRAPHY		201

APPENDICES	233
APPENDIX A CHAPTER 3	235
APPENDIX B CHAPTER 4	239
APPENDIX C CHAPTER 5	241
APPENDIX D CHAPTER 6	243
APPENDIX E CHAPTER 7	249
APPENDIX F PERMISSIONS	255

List of figures

Figure 1–1: Theoretical concept of this thesis and empirical approach.....	9
Figure 3–1: Structure of the educational system in Russia.....	49
Figure 3–2: Measures of income inequality in Russia.....	59
Figure 4–1: Definition of the point of leaving the educational system in the sample	71
Figure 5–1: Predicted probabilities for authoritative position based on logistic regressions in Table 5–5	104
Figure 6–1: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping.....	133
Figure 6–2: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by initial educational level	135
Figure 6–3: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by occupational resources	136
Figure 6–4: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by gender.....	138
Figure 7–1: Modeling of an individual career in a single- and multi-episode modeling approach.....	164
Figure 7–2: Plot of survivor functions (product-limit estimation) for (re-)employment chances for Soviet and post-Soviet labor market entrants, by period.....	169
Figure 7–3: Plot of survivor functions (product-limit estimation) for up- and downward mobility for Soviet and post-Soviet labor market entrants, by period.....	170
Figure D–1: Entry into upgrade: plots of pseudo-residuals based on the Cox and Snell (1968) approach.....	243

Figure D–2: Entry into sidestep: plots of pseudo-residuals based on the Cox and Snell (1968) approach.....	244
Figure E–1: Definition of adult education variables, a snapshot from the simulated data ...	249

List of tables

Table 2–1: Types of transitional economies and elite opportunity by regime change and policy environments.....	34
Table 4–1: Information about the coding of variables.....	73
Table 5–1: Educational attainment levels of labor market entrants by gender over period of labor market entry (column percentages)	96
Table 5–2: Entry into branch of economy by gender and period of labor market entry (column percentages)	97
Table 5–3: Overall sex segregation across branch of economy by period of labor market entry	98
Table 5–4: Proportion of men and women entering authoritative position in the first significant job by period of labor market entry	98
Table 5–5: Logistic regression models predicting entry into authoritative position in first significant occupation (results as log odds ratios). N=5,825	100
Table 5–6: Logistic regression models predicting entry into authoritative position in first significant occupation with interaction terms (results as log odds ratios), N=5,825	103
Table 5–7: Estimated factual and synthesized predicted probabilities and odds of entry into an authoritative position with respect to gender ^a	107
Table 5–8: Log odds ratios and estimates of the relative importance of the direct effect	108
Table 6–1: Incidences of adult education, distinction between upgrading (UP) and sidestepping (SST).....	127
Table 6–2: Proportion of adult learners in Russia overall and by period	134
Table 6–3: Piece-wise constant exponential model on the entry into upgrading	141
Table 6–4: Piece-wise constant exponential model on the entry into sidestepping.....	143

Table 7–1: Modelling details: Events, risk sample, and time	162
Table 7–2: Proportion of adult learners in Russia	168
Table 7–3: Piece-wise constant exponential model, average effects (logit coefficients)	172
Table 7–4: Piece-wise constant exponential models, interactions between adult education and gender (logit coefficients)	174
Table 7–5: Piece-wise constant exponential models, interactions between adult education and initial education level (logit coefficients)	176
Table 7–6: Tests of interaction effects between adult education and initial educational level	177
Table 7–7: Piece-wise constant exponential models, interactions between adult education and period (logit coefficients).....	179
 Table A–1: Russian educational system – ISCED (1997) correspondence table	235
Table C–1: Comparison of model specifications (N = 5,825)	241
Table C–2: Comparison of LR improvement test (N = 5,825)	241
Table C–3: Further effects from regression models 5, 6, 7, and 8 in Table 5–5 and Table 5–6 (logistic regression model on entry into authoritative position)	242
Table C–4: Gender gap in entry into authoritative versus non-authoritative position by period of labor market entry, educational level, and branch of economy	242
Table D–1: Likelihood ratio improvement test, compared to standard exponential model..	245
Table D–2: Akaike’s information criterion and Bayesian information criterion.....	245
Table D–3: Further effects from regression Models 1.1, 1.2, and 1.3 in Table 6–3 (piece-wise constant exponential model on entry into upgrading).....	246
Table D–4: Further effects from regression Models 2.1, 2.2, and 2.3 in Table 6–4 (piece-wise constant exponential model on entry into sidestepping).....	247

Table E-1: Comparison of LR improvement test	250
Table E-2: Akaike's information criterion and Bayesian information criterion	251
Table E-3: Further effects from models on (re-)employment chances	252
Table E-4: Further effects from models on upward occupational mobility	253
Table E-5: Further effects from models on downward occupational mobility	254

Chapter 1

Introduction and research questions

1.1 The “natural experiment” of the regime change in Russia

Studying post-socialist countries such as Russia provides an outstanding opportunity for the inquiry of social stratification, particularly due to the scale and the immediacy of major post-Communist changes. On the one hand, these changes happened instantly, they embraced all spheres of social and economic life, and they are very apparent and relatively easy to trace. On the other hand, cultural structures, people's habits, stereotypes, and strategies for living life and making life-course decisions change at a much slower rate: Culture is more inert. Hence, studying the Russian case offers a unique chance to examine institutional and cultural impacts and their mechanisms.

From a sociological point of view, Russia's society is an interesting example because “state socialism had a longer life there and was homegrown rather than imposed by a foreign occupying power” (Gerber & Hout, 1995, p. 612). In the Union of Soviet Socialist Republics (USSR), there was no competitive labor market, and the workers' allocation, wage system, and consumption opportunities were circumscribed and controlled by the state. Workers' mobility outside of governmental scenario (central planning system) was considered negative and undesirable. The whole Communist ideology was aimed at stabilization of the pre-defined life and working tracks.

For the socialist state, education was of the utmost importance as an instrument for building Communism and promoting economic and political growth (Noelke & Müller, 2011). Correspondingly, the state took over full control of the educational system and “determined” individual access to education and its social and economic outcomes (Titma & Saar, 1995). The ideological apparatus gave primacy to the prosperity of Soviet society rather than to aspirations and preferences of individuals (Gerber, 2003; Titma & Saar, 1995). At the same time, education was strongly vocationally oriented, and credentials played an important role in the labor market, assuring a smooth and secure transition from school to work and shaping life chances. As result, individual life courses were highly standardized, resulting in a high degree of stability and security (Mach, Mayer, & Pohoski, 1994).

The Communist regime aimed at minimizing social inequality on ideological grounds. This dogmatic view purported no antagonistic classes in the USSR and equal life chances for various social groups (Von Beyme, 1981). This notwithstanding, studies have found ample evidence that various forms of social inequality did exist in Soviet Russia (Yanowitch, 1977), e.g., in terms of income (Bergson, 1984; Dobson, 1977), gender pay gap (Katz, 1997), and education (Gerber & Hout, 1995). With the fall of the Iron Curtain in 1991, the economy and the labor market changed immensely: Russia was hit by an “integration shock” that has led to massive restructuring of the labor market and to growing uncertainty (Gimpelson & Lippoldt, 2001). These developments together with the initial orientation on the liberal welfare regime model (Davidova & Manning, 2009; Hanson & Teague, 2007; Kapeliushnikov, Kuznetsov, & Kuznetsova, 2011; Knell & Srholec, 2007) and redounded to dramatic decline in the living standards of Russian people (Gorodnichenko, Sabirianova Peter, & Stolyarov, 2010). These turbulent processes of overall economic and market developments have undoubtedly had dramatic economic and social consequences with a great deal of unplanned job mobility and major life-course changes.

1.2 Social inequality and regime change: the main research questions of this thesis

Given such enormous upheavals in political, economic, and social institutions, this thesis addresses an important inquiry regarding how the regime change in Russia shaped patterns of “who gets what and why?” (Lenski, 1966, p. 3), i.e., of social inequality. Three questions are tackled: (1) To what extent did various forms of social inequality prevail under the Communist regime? (2) How has post-socialist transition to a market economy structured the patterns and the degree of social inequality? and (3) What processes have been driving these changes? Studying these questions for the example of Russia is particularly intriguing since Russia is a cradle for Communism and a country with a turbulent and uncertain transformation process in the aftermath of the Soviet Union collapse.

Theoretical predictions stipulate that the introduction of market forces should have had a lessening effect on social inequalities as a result of moving from hierarchical social order to a liberalized market economy (Nee, 1991). Empirical findings, however, seem to refute this view (Verhoeven, Jansen, & Dessens, 2005) and regularly challenge Nee’s influential Market Transition Theory. For instance, transition to the market was found to be associated with growing income inequalities (Bian & Gerber, 2008; Verhoeven, 2007), an increase of

inequality in educational opportunity (Gerber, 2000a, 2007; Kogan, Gebel, & Noelke, 2012), and declining class mobility (Gerber & Hout, 2004; Rona-Tas, 1994; Saar, 2009).

The inquiry on the regime change impact becomes particularly relevant when considering the immense bulk of cross-national literature examining (and anticipating) the role of institutional settings for social inequality (e.g., Allmendinger, 1989; H.-P. Blossfeld, Kilpi-Jakonen, Vilhena, & Buchholz, 2014; H.-P. Blossfeld, Skopek, Triventi, & Buchholz, 2015; H.-P. Blossfeld & Stockmann, 1999; M. Buchmann & Charles, 1995; Dieckhoff, 2007; Estévez-Abe, 2006; Hout & DiPrete, 2006; Müller & Gangl, 2003; Müller & Shavit, 1998; Soskice, 1999; Steinmetz, 2012). While very helpful, the cross-comparative approach has some limitations that reduce the explanatory power and interpretation of the obtained results (Jowell, 1998) because countries differ strongly in respect to hardly comparable institutional structures, cultural aspects, and data and sample definitions. Nevertheless, comparative studies imply that regime change should have had an impact on life course patterns, but this is difficult to prove (Mayer, 2006).

My thesis proposes another strategy to “measure the impact of institutions,” i.e., the impact of regime change. Drawing on a cross-temporal lens, I study change by comparing two periods of time, namely the Soviet period (1965-1990) and the Post-Soviet period (1991-2005). This comparison allows for tracing the consequences of the “natural experiment” of fundamental economic and societal change, which took place after the collapse of the Soviet Union. Accordingly, if institutions determine specific patterns of social inequality, then we should find these effects when institutional structures change.

Despite such a plentiful research field, sociologists have primarily focused on the liberalization reforms’ impact on intergenerational transmission of social advantage (C. Buchmann & Hannum, 2001; Bukodi & Goldthorpe, 2010; Gerber & Hout, 2004; Robert & Bukodi, 2004; Rona-Tas, 1994; Saar, 2009; Zhou, Moen, & Tuma, 1998) and on the role of family background for educational opportunities in earlier life courses (P. N. Blossfeld, Blossfeld, & Blossfeld, 2015; Gerber & Hout, 1995; Gerber, 2000a, 2007; Heyns & Bialecki, 1993; Kogan et al., 2012; Mateju, 1993; S. Szelényi & Aschaffenburg, 1993). Furthermore, the literature has tackled the issues of change in income inequalities (see Verhoeven et al., 2005 for comprehensive review) as well as in returns to education (Bukodi, 2009; Gerber & Hout, 1998; Gerber, 2003; Konietzka & Bühler, 2010; Saar, Unt, & Kogan, 2008; Saar, 2005; Solga & Konietzka, 1999; Täht, Saar, & Unt, 2009) and to party membership (Geishecker &

Haisken-DeNew, 2004; Gerber & Hout, 1998; Gerber & Mayorova, 2010; Gerber, 2000b, 2001b; Hanley, Yershova, & Anderson, 1995; Rona-Tas & Guseva, 2001; Shu & Davis, 2003). Considerably less is known about how the regime change has influenced other aspects of social inequality, such as gender relations (however, see Brainerd, 2000; Gerber & Mayorova, 2006; van der Lippe & Fodor, 1998), intra-generational inequality patterns (however, see Ivančič, 2000; Mach, 2004), and inequality in educational opportunities in the later life course (however, for some indirect evidence, see Konietzka & Bühler, 2010). Accordingly, one of my core contributions to the sociological literature is tackling the specific aspects of social inequality that have been largely ignored by previous research on transition economies.

Beyond being quite limited in scope in terms of the aspects of social inequality, the “transitional” literature is challenged regarding its timing aspects. Most of the research on transitional societies was instigated in the first decade after the collapse of the Soviet Union. In this context, three main problems should be considered: First, most of the surveyed data were cross-sectional, which did not allow studying and disentangling the impact of the regime change from other life-course-related modifications (e.g., changes in human capital and in job experience, family-related changes). Second, windows of observation were rather short and consequently too limited to enable conclusions about the regime change’s long-term impact on social inequality, particularly because the establishment of the new economic and social institutions took time. Third, a lack of comprehensive longitudinal and life-history data constrained analyses in identifying causal mechanisms. All these aspects, in turn, have led to various inconclusive and often contradictory conclusions.

My thesis contributes to the transitional literature by studying the regime change impact on various aspects of social inequalities based on the following case studies: (1) horizontal and vertical gender differences and inequalities at labor market entry, (2) the impact of initial educational and occupational resources on access to formal adult education, and (3) the role of adult education in lowering Matthew effects, i.e., inequalities due to initial educational and occupational attainment. In this sense, the first case study addresses social inequalities in terms of gender inequalities; the second case study approaches social inequalities in terms of inequality of (adult-)educational opportunity; and the third case study focuses on social inequality aspects from an intra-generational perspective. Contrary to previous research, I

adopt a life-course perspective and focus on the status attainment processes by studying the regime change impact on the career start and its developments.¹ In this regard, I place an analytical focus on educational careers, which are decisive for the status attainment processes (Blau & Duncan, 1969).

Empirically, I rely on well-suited longitudinal data for Russia – the linked data from the Gender and Generation Survey (GGS) and Education and Employment Survey (EES). These data cover a time span of twenty-five years of state socialism and fifteen years of post-socialism. This forty-year period bore witness to stable and secure socialist life-course patterns and dramatic related changes to these patterns in the aftermath of the Soviet regime collapse. The data provide rich life-course information on educational, occupational, family, and residential career trajectories, thereby allowing the exploration of different aspects of social inequality in individual life course and their variation over the regime change in Russia.

1.3 Life-course perspective on social inequality: educational trajectories by and during adulthood

Education has been one of the most pivotal topics for scholars and policy-makers for several decades. Sociological research conceives of education and the organization of educational institutions as key factors for the analysis of stratification processes in modern societies because education is considered a channel for social mobility and status attainment. Economic studies discuss the role of education in terms of development and economic growth, educational choices and their subsequent returns, and how reforming the educational system may affect individual educational choices.

At the micro-level, education is one of the most powerful assets throughout the individual life course, and not only determines one's position at the time of labor market entry (Blau & Duncan, 1969) but also often limits the extent to which one can progress (Hillmert, 2011; Müller & Shavit, 1998). Until quite recently, educational attainment was considered “wholly prior to the first job” (Kerckhoff, 1995, p. 332). However, in knowledge-based societies,

¹ I additionally review and elaborate on other aspects of social inequalities that have been addressed in the literature on transitional societies.

education has become a lifelong process through which individuals acquire and develop skills and competences throughout the entire life span from all potential and available sources. Stratification research usually focuses on the analysis of different stages of the educational career separately, and their importance in terms of inequality is often discussed within a shorter time horizon. Due to the aforementioned reasons, it is crucial to map and to analyze the patterns and processes of education and training by and during adult phases of the life course to obtain a comprehensive picture.

Life-course research has provided evidence for a so-called “Matthew effect” (Merton, 1968), or a cumulative disadvantage/advantage hypothesis (DiPrete & Eirich, 2006; Elman & O’Rand, 2004) predicting that (socio-economic) advantages in the earlier stages of educational careers are reproduced and amplified in later (educational) opportunities and outcomes. In other words, this effect predicts that initial educational inequalities grow over the life span, meaning that both education and labor market related inequalities are steadily amplified. This effect might have important consequences for the adult phase: Adult education is often considered to provide opportunities to reduce inequalities that have emerged over the life course because it might provide the chance to attain a higher educational level or to change the occupational field (H.-P. Blossfeld et al., 2014). However, if more-educated individuals have more opportunities for training and education in the later life course, adult education is likely to increase initial inequalities according to the Matthew effects. To draw the appropriate theoretical conclusions about educational inequalities over the life course, an understanding of the long-term effects of initial education is crucial, especially in terms of whether and to what extent this effect is reproduced and cumulated over the whole individual life course.

In this regard, when discussing educational life-course trajectories in Russia, we should bear in mind that under the Soviet regime, individual choices were restricted and that “the state had a total control over the distribution of educational and social opportunities and over the criteria of educational selection” (Titma & Saar, 1995, p. 37). Hence, if educational trajectories were stratified, we can anticipate that they were not the result of the individual choices, but rather of Soviet policies. With the collapse of the Soviet Union, the state monopoly on education was eliminated, and the educational system was decentralized and liberalized, which, in turn has led to “freedom of choice” in education and the subsequent educational expansion. However, this freedom has not been advantageous for every social

group, and educational choices and decisions (as well as educational outcomes) have become a matter of social selectivity.

Although educational choices are individual decisions that are often circumscribed by family and socio-economic resources, previous research demonstrates that educational trajectories and payoffs are country-specific and are shaped by institutional settings, such as the organization of the educational system and the welfare regime (e.g., Allmendinger, 1989; H.-P. Blossfeld & Stockmann, 1999; Dieckhoff, 2007; Müller & Shavit, 1998; Soskice, 1999). Accordingly, institutions are major sources of information for the extent to which educational systems sort students into different tracks and for the role of the certificates produced by them. Additionally, labor market structures and employment regulations are important for the level of market supply of educational opportunities and educational outcomes for the labor force (Dieckhoff, 2007; Soskice, 1999). Finally, welfare policies determine the role of the state in covering labor market risks and needs and influence chances for disadvantaged groups to participate in adult education (Kilpi-Jakonen, Vono de Vilhena, Kosyakova, Stenberg, & Blossfeld, 2012; Lassnigg, 2005; Rubenson & Desjardins, 2009). Therefore, by examining Soviet and post-Soviet Russia – characterized by distinct institutional structures before and after the collapse of the Soviet Union – I contribute to the further development of a systematic theoretical concept on how the entire institutional country framework shapes educational trajectories and (the resulting) social inequality.

Against this background, I structure my analyses of the regime change on social inequalities in Russia along three specific stages in educational and occupational careers: (1) the school-to-work transition at the beginning of the labor market career, (2) the work-to-school transitions (assuming that labor market entry has occurred), and (3) the consequences of the initial and adult school-to-work transitions for the labor market career in Soviet and post-Soviet Russia. How I approach the defined objectives of my thesis is described in the following sub-section.

1.4 Concept and outline of the study

Social inequality is a multifaceted pervasive concept tackling the problematic of “unequal rewards or opportunities for different individuals within a group or groups within a society” (Scott & Marshall, 2009). The inequality of rewards and opportunities may arise during various life course stages and phases and cumulate over individual’s life course in a path-

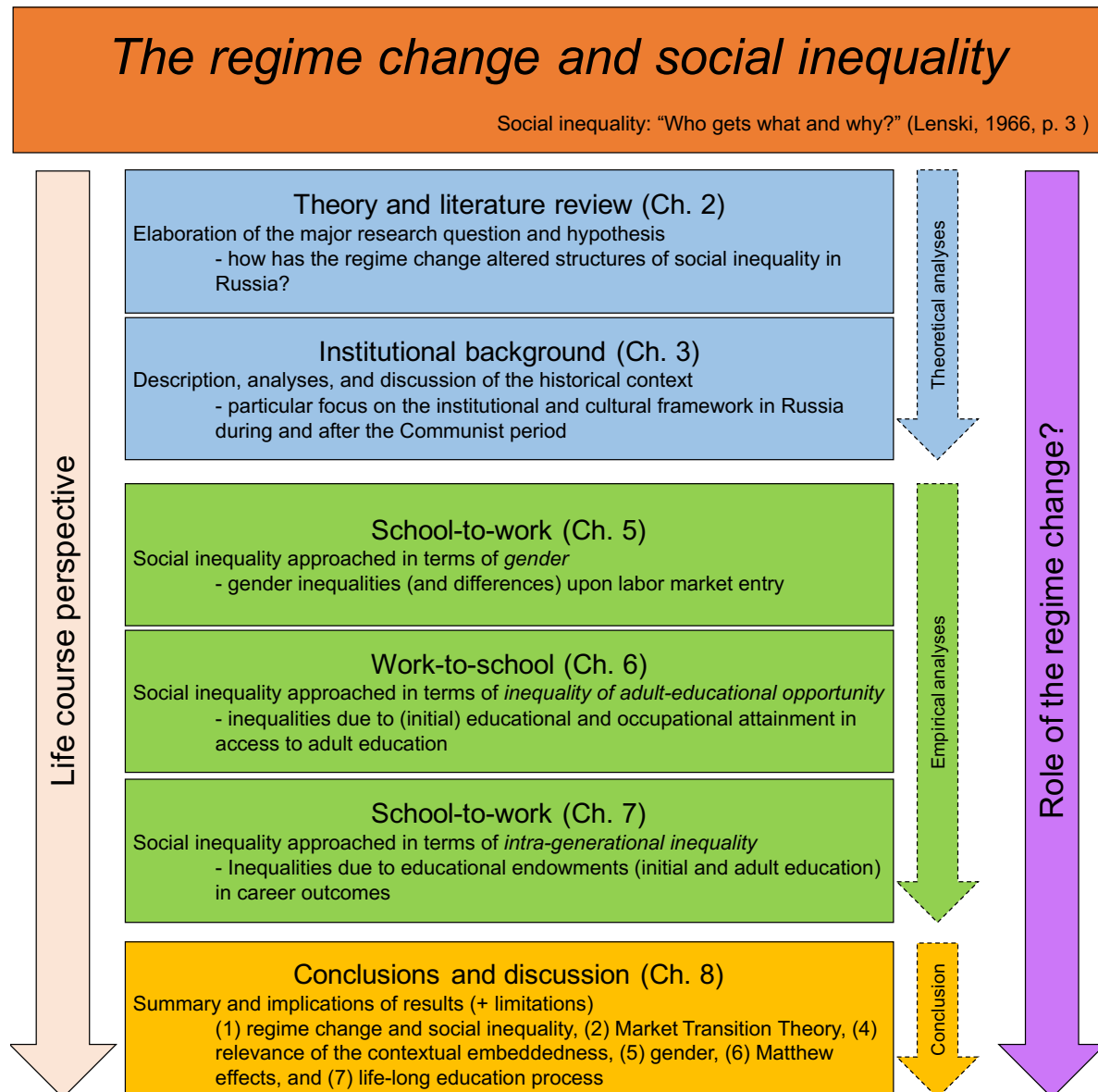
dependent way, often following the logic of the Matthew effect. The extent to which these commutations of initial advantages and disadvantages progress over the life course is argued to be contingent on a society's institutional and cultural set-up. Cross-comparative research provides ample empirical evidence supporting those claims. In this type of research, scholars tend to (over-)emphasize the relevance of institutions and often assign to them a “deterministic” influence on individual life courses. If these postulations are valid than we should find changing patterns of social inequalities in countries experiencing gradual changes in their institutional arrangements.

The central goal of my thesis is to address the impact of changing institutional and cultural frameworks – the regime change – on the several specific aspects of social inequality which has been overlooked by previous literature. In contrast to prior research, I draw on a life-course perspective looking at various stages of the status attainment processes after the initial educational level has been achieved. Consequently, my empirical analyses are structured along the processes of school-to-work and work-to-school transitions in the earlier and later life courses. Figure 1–1 outlines the main concept of my thesis and dimensions of social inequality which I will elaborate on in my analyses.

My investigation is clearly informed about the fact that social inequality arises very early in the life course and the process of attainment with regard to initial education. For that reason, I provide a comprehensive overview to the pertinent literature that makes the reader aware of important findings with respect to the emergence and prevalence of social inequality up to stage of labor market entry. In addition, my review is treating those issues specifically for transition societies during and after the communist regimes.

In the first step of my empirical study, I focus on the initial school-to-work transition stage and approach social inequality from a gender perspective. In the second step, I explore the “work-back-to-school” transition process by focusing on inequality in participation in adult education due to (initial) educational and occupational attainment. In other words, I study inequality of adult-educational opportunity. In the third step, I devote to the “school-back-to-work” transition in the later life course stages. I particularly address inequality in returns to adult education due to initial educational endowments. In other words, I assess the consequences of adult education for intra-generational mobility.

Figure 1–1: Theoretical concept of this thesis and empirical approach



Note: Own illustration.

This thesis consists of one introductory, one theoretical, one descriptive, and three empirical chapters consolidated by a common goal of scrutinizing the impact of the regime change on social inequalities in Russia. In the following, I outline the content of each chapter in more detail.

In Chapter 2, I elaborate on the main research question of this thesis, namely whether and in what way the regime change has altered inequality structures among different social groups in Russia. First, I discuss the importance of institutional contexts from the life-course perspective. Life courses are viewed as cumulative, path-dependent flow charts embedded in

and structured by institutional arrangements. Therefore, when studying social inequalities, it is of the utmost importance to consider the contextual conditions and opportunities, particularly when these conditions and opportunities are changing, as in the immense regime shift that happened in Russia after the collapse of the Soviet Union. Secondly, the question of how the introduction of market-based institutions affected social inequalities in post-Communist countries has caused a great deal of debate in the sociological literature. Hence, I contribute to this debate by incorporating the Russian case in more detail. Finally, I review and summarize the current literature on the impact the regime change has had on social inequality in countries with a socialist past. I close the chapter with a brief summary of the main arguments and formulate the overarching hypothesis of this thesis.

As cross-national research has shown, country set-ups might “open some doors and close others”. Therefore, Chapter 3 is devoted to the description, analyses, and discussion of a historical context with a particular focus on the institutional and cultural framework in Russia during and after the Communist period. This macro-level environment is said to be crucial for the micro-level life courses and is relevant in this regard for the analyses in the following empirical chapters. Reviewing official legislation, as well as empirical and theoretical research, I outline the main features of the educational and vocational systems in Soviet Russia and the major changes and reforms that followed the collapse of the Soviet Union. Afterwards, I deliberate on Russia’s welfare regime, which encompasses (a) the characteristics of the labor market structure and the role of employment regulation, and (b) the welfare system and the role of state in covering risks for vulnerable groups. Finally, I address the issue of gender-specific policies and norms, as they are of particular relevance for this thesis.

Chapter 4 describes the data used in the empirical investigations, overall data preparation process, and the sampling and construction of variables for empirical analyses.

Chapter 5 investigates labor market and social inequality in respect to gender. The main focus is on changes in horizontal and vertical gender segregation in Russia upon labor market entry before and after the collapse of the Soviet regime. My results provide evidence for horizontal gender segregation across branches of the economy among labor market entrants in Russia, which have been growing since 1991. Moreover, horizontal differences seem to be driving vertical gender inequalities in terms of entry into authoritative positions. Accounting for heterogeneity in education and the entered branch, I find that despite gender equality

principles and full-time employment for women, vertical gender inequalities existed under the Soviet regime. However, these inequalities increased during the liberalization reforms. The growing vertical gender inequalities can mainly be traced back to a worsening of female chances in an economic transition, whereas there was no significant change for male entrants. Furthermore, women seem to be particularly disadvantaged among highly qualified entrants. I conclude that Russian female entrants have not fully converted their educational advantage into occupational opportunities since the transition from socialism to a liberalized market economy.

Life-course research argues that initial advantages in educational careers are likely to be reproduced and amplified in later educational and labor market opportunities. Accordingly, Chapter 6 examines whether and how enrollment in distinct types of adult education – upgrading (defined as achieving a higher formal level of education) and sidestepping (defined as achieving the same or lower level of formal education) – can compensate for these initial inequalities in socialist and post-socialist Russia. Hence, I tackle the issue of unequal adult-educational opportunities due to initial (educational and labor market) attainment. Furthermore, distinguishing between upgrading and sidestepping is an original contribution going beyond previous research and enables my analysis to shed more light on contradicting earlier findings. I have found that initially educationally disadvantaged individuals and occupationally advantaged individuals are more likely to upgrade. In turn, sidesteppers tend to be initially educationally advantaged, while occupational advantage is less relevant. Nevertheless, the collapse of the Soviet Union has reduced opportunities for all groups, particularly for the previously disadvantaged. I conclude that selective participation in adult education might lessen or exacerbate inequality in adult-educational opportunity depending on the type of adult education and analysed group of participants. Nevertheless, the regime change has clearly contributed to inequality of adult-educational opportunity, thereby strengthening the exacerbation effect of adult education on social inequality.

Adult education may mitigate lifetime social inequalities by allowing educationally disadvantaged groups to catch up to their advantaged peers and thereby improve their career prospects. Challenging this idea, Chapter 7 examines returns to adult education and implications for social inequality in Russia from an intra-generational mobility perspective. Again, I differentiate between upgrading and sidestepping adult education strategies, because they are likely to provide distinct signals to the potential employers and, hence, may have different consequences for career outcomes. Results show that adult education either pays off

equally for all groups or benefits predominantly those who are initially already more educationally advantaged. Hence, initial social inequalities are not offset but rather amplified through adult education in Russia. Furthermore, since the collapse of the Soviet Union, adult education has become less effective in terms of career opportunities compared with the pre-collapse period. My study highlights the importance of taking institutional set-ups into account when studying returns to adult education.

In Chapter 8, I summarize the results of the empirical chapters and discuss their implication from several perspectives: (1) regime change and social inequality, (2) Market Transition Theory, (4) relevance of the contextual embeddedness, (5) gender, (6) Matthew effects, and (7) life-long education process. I wrap up the thesis by elaborating on limitations and recommendations for future research.

Chapter 2

Theoretical background: social inequalities in the life course and regime change

2.1 Introduction

Life-course approaches perceive individual life trajectories as a “sequence of activities or states and events in various life domains that span from birth to death” (Mayer, 2003, p. 464). Although individuals decide on their own life sequences, these life sequences can often be shaped by broader institutional contexts and by historical events. In this regard, individual opportunities and life patterns are often structured and challenged by the social forces in which they are embedded (Elder, Kirkpatrick Johnson, & Crosnoe, 2003).

Given the centrality of the “contextual” issue, the collapse of the Communist regime in Russia and the associated fundamental transformations in political, economic, and institutional structures provide a unique opportunity to study key ideas of the life-course approach. At the micro level, the collapse of the Soviet Union has altered life courses substantially, effectively bringing an end to the guaranteed employment and the secured life journey associated with it (in economic terms). At the macro level, the consequences of this abrupt social change include drops in employment, output, and real income, as well as the outbreak of poverty, unemployment and social inequality (Mayer, 2006; Noelke & Müller, 2011).

The overriding objective of the current chapter is to elaborate the general hypothesis of this thesis in respect to the impact of the regime change on social inequalities in Russia. For the purpose of deriving well-grounded expectations, I first discuss the relevance of assessing the institutional embeddedness of stratification in the life course. I constrain myself to education- and employment-related (adult) life-course trajectories and focus on two specific transitions,

namely (1) school-to-work and (2) work-to-school.² Following this, I turn to the market transition theory and its applications to social inequality. In the next step, I review available studies on the impact of regime change on various aspects of social inequality in countries with a socialist past. The chapter concludes by deriving the main hypothesis of the thesis.

2.2 The life course and social inequality

Generally speaking, conceptions of the life course assume that prior individual decisions and experiences shape later decisions and experiences, with various outcomes for various life journeys. In this context, the so-called “social pathways” encompass individual and group trajectories over the life course and are concerned with educational and occupational attainment, family formation, and residential area (Elder et al., 2003). Hence, individuals’ subsequent economic and non-economic outcomes throughout their life course are highly contingent on the previous decisions and experiences made along these social pathways.

When talking about decisions and experiences, we intuitively assume that individuals have active roles of “casual agents in the construction of [their] environments and [them]selves” (Gecas, 2003, p. 369). However, the attainment of initial education highly depends on social origin and decisions made earlier by parents, whereas educational and working careers after the initial education stage are instead a construct of the individuals’ “active decision making” process. Therefore, studying whether and to what extent various social institutions might shape these decisions is worthwhile. However, before turning to a discussion on institutional arrangements, I provide a brief overview of the major developments in the literature concerned with social inequality that emerge in the phase prior active decision making, namely inequality due to family background. In the literature, this type of inequality is usually termed as early-life-course “inequality in educational opportunity.”

2.2.1 Inequality in educational opportunity in the earlier life course

During the twentieth century, the industrialized world experienced educational expansion and increasing educational opportunities for the masses. However, stratification in educational

² The school-to-work transition refers to employment trajectories after initial or adult education (assuming that initial education has been attained). The work-to-school transition refers to educational trajectories (assuming that labor market entry has occurred). For methodological details, see Chapter 4.

opportunities seems to be rather persistent; in almost all countries, children from families with lower socio-economic status are still facing lower chances of attaining higher educational levels (e.g., Ballarino, Bernardi, Requena, & Schadee, 2009; Breen, Luijkx, Müller, & Pollak, 2009; Rotman, Shavit, & Shalev, 2015; Shavit, Yaish, & Bar-Haim, 2007). Despite the prolongation of compulsory schooling, educational opportunities are still rather unequally distributed and are tightly connected with family background (H.-P. Blossfeld & Shavit, 1993; Boudon, 1974; Ganzeboom, Rijken, & Treiman, 2009; Mare, 1980; Rijken & Ganzeboom, 2000). For example, children from upper social strata have better access to pre-school education and returns to it in form of higher school attainment (R. Becker & Lauterbach, 2008), they are more likely to be placed in higher secondary school tracks (Grand, Szulkin, & Tåhlin, 2005; Stocké, 2007; Tieben, 2009), they have higher subsequent educational achievements (Dustmann, 2001; Reimer & Pollak, 2009), and they are more likely to return to education (Hällsten, 2011) and to receive training at mature ages (Schömann & Becker, 1995). These findings stress that education is a highly cumulative process, which follows a principle of path-dependency labeled the “Mathew effect” (Merton, 1968) and/or a logic of cumulative advantage and disadvantage (DiPrete & Eirich, 2006). The latter predicts that initial educational inequalities (due to the class differences) grow over the life span, meaning that both education and labor market related inequalities are steadily amplified.

For decades, scholars from various fields of research have been trying to detect mechanisms behind educational decisions and inequality in educational opportunities (IEO) over the life course. Social origin is thereby crucial and is considered as a major driving force for the stratification process influencing (1) the class-dependent differences in educational decision-making process (e.g., Boudon, 1974; Breen & Goldthorpe, 1997; Erikson & Jonsson, 1996; Esser, 1999; Gambetta, 1987), (2) the class-dependent differences in the beliefs and values about educational success and differences in educational preference (e.g., Hyman, 1966), and (3) the class-dependent differences in the educational opportunities (e.g., Bourdieu & Passeron, 1971; Coleman, 1988; Sewell, Haller, & Ohlendorf, 1970).

The literature in the IEO field differentiates between the so-called “primary” and “secondary” effects of social origin (Boudon, 1974). Primary effects incorporate the impact of social origin on educationally relevant competencies (academic performance). This means that upper social stratum has more resources relevant for learning and provides more stimulating environments for learning. Thus, primary effects might lead to class-dependent inequalities

before entering school. Secondary effects describe educational choices that children from different social strata make within the educational system. In this regard, social origin is crucial for the following educational decisions, even under the assumption of identical previous academic performance. The secondary effects are therefore decisive for educational inequalities.

The main mechanism concerned with decisions of investment in education might be characterized as a “status maintenance motive”. In trying to maintain their status level, privileged classes share higher educational aspirations regarding their offspring’s educational careers because downward moves might be very “painful”. At the same time, for lower classes, less education does not necessarily associate with intergenerational status demotion (Boudon, 1974; see also Stocké, Blossfeld, Hoenig, & Sixt, 2011). In line with the concept of (relative) risk aversion, all classes aspire to avoid downward mobility (Breen & Goldthorpe, 1997). However, the subjective perception of educational decisions works differently for different classes: A specific educational transition might be considered a downward move by higher classes, whereas middle classes might consider it status maintenance. For instance, upper classes might invest in (more expensive) education in order to maximize the probability of entering into the service class, whereas the working class might focus on the minimization of risks of entering the underclass.

Class-related educational inequalities may further arise due to distinct value systems of classes, as well as their beliefs and attitudes (Hyman, 1966). A significant role is given to motivational aspects and self-confidence (Hyman, 1966), ambitions (Elder, 1968), reference groups, and peer-group effects (Singer, 1981), all of which vary among different classes. Lower classes might be generally less motivated to achieve great success. However, research indicates that those with a high level of abilities and high ambitions might show deviant behavior, implying an interaction between abilities and motivation (Elder, 1968). Lower classes face self-imposed barriers to upward mobility due to a strong conviction of less opportunities and inaccessibility of success. Additionally, they are also less motivated to reach traditional goals of high success, perhaps because they do not consider these goals to be traditional. As result, they might suffer less from the impact of their low status (Hyman, 1966). Moreover, lower classes appear to be less motivated because of awareness of fewer (socially imposed) options, and they constrain themselves in order to avoid negative experiences of frustration and failure.

The role of reference groups and the influence of significant others on the self-evaluation processes and consequent behavior are no less important. The expectations of the significant reference groups can shape the learner's educational and occupational aspirations, as reference groups might serve (1) as standards of comparison of an individual's performance and (2) as a source of an individual's norms, attitudes, and values (Singer, 1981; see also Sewell et al., 1970; Sewell, Haller, & Portes, 1969). Parental valuation of education might work as a mediating instrument in the educational aspiration of their children and their development in the following years, even if parents lack of opportunities to provide necessary resources to prepare academic skills and knowledge (see e.g., Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). However, the influential power of significant others might vary with the frequency of interpersonal contact and communication (Friedkin, 1993), parent-offspring closeness (Hoffman, Hofacker, & Goldsmith, 1992), and the strength of ties (Granovetter, 1973).

Furthermore, the social capital theory refers to possibilities of the upper social strata to mobilize social resources and their superior connections to others in order to attain better social status (Coleman, 1988). Cultural reproduction theory, in turn, states that students from upper social strata have a more advantaged position in the educational system due to their higher initial level of culture, which, in turn, is a "legitimate" culture in the school system (Bourdieu & Passeron, 1971; Bourdieu, 1986).

To sum up, the underlying mechanisms discussed here highlight the existence of class-specific social inequalities that emerge in the earlier life courses. However, research has also demonstrated that the impact of the socio-economic background is stronger in earlier stages of the educational career than in later ones (H.-P. Blossfeld & Shavit, 1993; Breen & Jonsson, 2005; Dustmann, 2001; Hällsten, 2011; Mayer & Tuma, 1990). Accordingly, in my thesis, I focus on the social inequalities that develop after initial education, yet I recognize their contingency on the inequalities that emerged during the initial phase of the educational attainment process.

2.2.2 Education as a life-long and life-wide process

Since the 1980s, the world has experienced a globalization process with important influence on the economic, social, and cultural spheres of life, and this process was accelerated through the rapid spread of information and communication technologies. Over the last decades, modern industrialized societies have shifted their focus from "manufacture-based" to

“service-driven” economies, leading to the wide recognition of “the importance of knowledge and intangible capital in fostering economic growth and social change” (Powell & Snellman, 2004, p. 202). These developments have led to growing worldwide interconnectedness (Alasuutari, 2000; Robertson, 1992) and internalization, an intensification of economic competition, accelerated diffusion of knowledge, and a rising importance of markets (Mills & Blossfeld, 2005). Altogether, globalization forces modern societies to continuously adapt their economies and workforces and to adjust the workforces’ skills and knowledge to constantly changing demands (Kristensson Uggla, 2008).

Moreover, in the aftermath of demographic aging, adult life expectancy, and reduced fertility (which have led to the increasing imbalance between those who contribute to the pension system and those who receive pensions), it has become necessary for companies and governments in modern societies to ensure that all potential workers remain in the labor market (Buchholz et al., 2011), e.g., by integrating and/or (re-)training those parts of the population that have so far been systematically excluded from employment (e.g., older employees, mothers, low-qualified workers, and migrants) (Kilpi-Jakonen, Buchholz, Dämmrich, McMullin, & Blossfeld, 2014).

Under these conditions, education has been becoming a life-long process through which individuals acquire and improve their skills, knowledge, and competencies throughout the life course from pre-school to post-retirement age. Furthermore, education has become a life-wide process that requires an increase in various types of learning (e.g., formal, non-formal and informal learning) across the full range of life activities in the personal, social, and professional context and that takes place at any stage in the life course (CEDEFOP 2008). As my dissertation deals with educational careers and labor market inequalities, the following discussion is limited to learning that is relevant for the labor market.

Formal learning occurs in such hierarchical and stratified organizations as education or training institutions or in-company training and leads to recognized certificates or diplomas that strongly affect labor market chances. Formal learning is always intentional but is characterized by an other-directed learning environment since a person is “educated” in the formal learning environment, particularly in schools. Correspondingly, the roles of teachers and students are defined in a clear-cut way (Eurydice, 2011; Kleinert & Matthes, 2009). *Non-formal* learning includes shorter institutionalized training courses that can lead to certificates (or to certificates that are not fully recognized), but not to a degree. Like formal learning,

non-formal learning is intentional and involves a teacher and a curriculum. It usually involves very (firm-)specific content and is often organized as a part of employment (including on-the-job training). *Informal* learning is self-directed and involves intentional (learning organized by individuals themselves, e.g., reading books, learning groups) and unintentional (learning-by-doing) learning activities.

To conclude, educational careers are shaped by specific learning environments and cumulate across the life course. In the Russian context, however, it is likely that the labor market value of skills obtained via formal learning has been changing throughout the course of liberalization. In turn, skills obtained via non-formal (especially firm-specific) and informal learning might have been being strongly devaluated (Kapeliushnikov & Lukiyanova, 2010; Lehmann & Wadsworth, 2000; Mayer, 2006; Sabirianova, 2002). This seems to be a consequence of the removal of state-defined wage regulations as well as growing opportunities and incentives after the transition to the labor market and, hence, an increasing signaling role of educational degrees as signals for skills and productivity (Noelke & Müller, 2011). Therefore, in the empirical part of my thesis, I focus on formal educational activities.

2.2.3 Structural embeddedness of the stratification process

According to the life-course approach, historically important societal events, such as wars, economic fluctuations, revolutions, and technological change, have enormous impact on life trajectories of individuals and cohorts. On the other hand, individual life courses are constructs of the choices and actions individuals make and take within the opportunities and constraints of the social structures and institutional environment (Elder et al., 2003; Müller & Shavit, 1998). In this respect, institutions can be considered as “mechanisms by which lives are channeled in specific ways” (Mayer, 2003, p. 163). This means that life courses are embedded in and framed by a *historical context* (e.g., Elder, 1994; Hareven, 1978, 1982) and structured by *social institutions* (e.g., Allmendinger & Hinz, 1997; Spilerman, 1977). Therefore, such enormous historical events as the regime change in Russia and the accompanying reforms to economic, political, and social institutions are likely to have been shaping individual life courses.

But how do institutions shape life courses? In the sociological research, the “collective environment” of institutions often plays an important role in individual choices and decisions to participate in education as well as in constraining or facilitating educational returns to the labor market (Allmendinger, 1989). The institutional organization of the educational and

vocational training system, in particular, has a strong impact on an individual's labor market entry and occupational mobility (which corresponds to the school-to-work phase mentioned above). For instance, the level of standardization, stratification, and vocational orientation of the educational system have been found to be crucial for the school-to-work transition and the labor market success of graduates because these institutional characteristics define the importance of the certificates and the level of occupational boundaries in the labor market (Allmendinger, 1989; H.-P. Blossfeld & Stockmann, 1999; Müller & Shavit, 1998; Saar et al., 2008).³ As result, educational certificates obtained in educational systems with different characteristics may produce different signals for employers (Rosenbaum, Takehiko, Settersten, & Maier, 1990).

Educational systems further differ in the “openness” of educational pathways, e.g., in the permeability of educational tracks (Kilpi-Jakonen et al., 2014). In knowledge-based societies, constantly changing demands call for a continuous adjustment of skills and knowledge within working life. This may be particularly true in countries in which the initial education transmits general as opposite to specific skills and in which labor market entrants thus first need on-the-job training in order to be useful to the employer (Müller & Shavit, 1998). Educational systems oriented towards the production of more general skills are also characterized by more common core curriculum, thereby facilitating the gaining an additional or new qualification (Kilpi-Jakonen, Vono de Vilhena, & Blossfeld, 2015). Educational systems producing more specific competences may also provide a favorable environment for returning to education in the later life course because of the fast erosion of the specific skills (Bassanini, Booth, Brunello, De Paola, & Leuven, 2005; Groenez, Desmedt, & Nicaise, 2007).

While an organization of the educational system is more determining in respect to the attainment and accumulation of individual resources in signaling the worker's suitability for a particular job, labor market regulations and the employment system are crucial in the employer's decision-making process when hiring a worker. These institutions determine the

³ Standardization describes the extent to which training conforms to the same standards and qualifications are widely recognized. Stratification describes the extent to which training is organized in a hierarchical structure. Occupational specificity describes the extent to which specific qualifications lead to and are required for specific occupations.

employment condition, risks and chances, and possible labor market outcomes of education (e.g., Breen, 2005; Müller & Gangl, 2003; Soskice, 1999). Moreover, labor law may regulate the labor market supply of adult learning, thereby shaping work-to-school transitions (Dieckhoff, Jungblut, & O'Connell, 2007).

Finally, the level of de-commodification⁴ offered by the national welfare system has a strong impact on the role of the state in contributing to the individual's options for learning and employment for vulnerable groups (Esping-Andersen, 1990; Lassnigg, 2005; Rubenson & Desjardins, 2009). Welfare state settings like labor market policy may be related to individual labor market chances and risks (Saar et al., 2008). Furthermore, gender-related policies and institutions, and societal gender norms are additional crucial aspects of welfare regimes that affect the interrelation between the labor market, (adult) educational opportunities, and family relations (Chang, 2000). By supporting a combination of education and/or work with family life, the family norms and policies can shape educational and occupational trajectories.

Overall, life-course trajectories are (1) stratified and complex individual outcomes resulting from (2) cumulative processes of previous decisions and experiences that are (3) embedded in institutional structures. Therefore, changes in institutional structures are very likely to affect the stratification order in a country (Gerber, 2003). The potential direction of these effects is discussed in the following sections.

2.3 Market transition and social inequality

This thesis's focus is on transitional societies, experiencing an immense political, economic, and social change since the collapse of the Soviet Union. Transition to a market economy and the impact of such changes on the existing stratification order has caused a great deal of debate in the empirical literature (see Verhoeven et al., 2005 for the review). Some authors have claimed that liberalization reforms should have a lessening effect on social inequalities, which – despite the proclaimed equality ideology – did exist under the Communist regime (Nee & Matthews, 1996; Nee, 1989, 1991, 1996; I. Szelényi & Kostello, 1996; I. Szelényi, 1978). Others, however, have argued the contrary, stating that capitalism advantaged the

⁴ De-commodification occurs when a service is rendered as a matter of right, and when a person can maintain a livelihood without reliance on the market (Esping-Andersen, 1990, p. 22).

privileged classes (Rona-Tas, 1994). In the following, I briefly summarize the ongoing debate on the impact of regime change on social inequalities. I explicitly concentrate on Nee's Market Transition Theory (MTT) and outline its main criticisms afterwards.

2.3.1 Social inequality under State Socialism

Despite the prevailing ideologies, there was no social equality under the Communist regime. Instead, the redistributive system was a major factor in reproducing and maintaining social inequalities (I. Szelényi, 1978). The state socialist system of redistribution was based on a hierarchy of redistributors (*cadres*) and producers in which resource allocation and income distribution followed central planning (Nee, 1989). In this system, the (political) bureaucracy was considered a new class under state socialism since control over means of production can be viewed as property rights (Djilas, 1957). Accordingly, as this class governed and controlled redistribution, inequality was present. In other words, on the one hand, more privileged groups had access and power over resources and their distribution, and on the other hand, they favored similar individuals. In this vein, the socialist system created advantages for those already advantaged via a redistributive allocation of scarce goods and services (I. Szelényi, 1978).

For instance, in socialist Hungary, private housing was allowed but heavily subsidized by the state. In contrast to capitalist economies, access to subsidized housing was secured for those already privileged: Highly qualified workers received state-built and -owned flats, while working class had to build houses at their own expenses (I. Szelényi, 1978).

Subsidized consumer prices were another effective mechanism for the reproduction of social inequality. The idea behind price subsidies was a value reallocation from higher to lower income groups via subsidization of the most important consumer goods, such as fruits and vegetables. Nevertheless, higher-status groups were said to be the primary beneficiaries of this policy because they consumed much more of the mostly subsidized goods compared with lower-status groups (Ladányi, 1975 as cited in I. Szelényi, 1978).

Higher social strata (with managers and professionals far ahead) received more material (e.g., family allowance) and non-material subsidies (e.g., medical and educational allowances, pension plans) compared with the lower social strata, with the exception of the inactive population (who received the most of subsidies overall). Moreover, the privileged groups also enjoyed non-material benefits of higher quality, such as private hospital rooms, highly

qualified medical specialists, and better schools (D. S. Lane, 1982; I. Szélenyi, 1978; Yanowitch, 1977).⁵

Finally, parental affiliation with the Communist party significantly increased chances of their offspring's being affiliated with the Communist party, demonstrating the intergenerational transmission process of privileged status (Hanley, 2003; Walder, Li, & Treiman, 2000). Altogether, the privileged enjoyed even more privileges, suggesting a cumulative life-course effect of the social advantage that was evidently further reproduced and maintained across generations.

2.3.2 Transition to market: Decreasing social inequality?

In contrast to the redistributive system, I. Szélenyi (1978, p. 64) argued that liberalization reforms should reduce social inequalities as they predominantly serve “the interests of the working class.” In line with this belief, the example of China's liberalization reforms in the agricultural sector has shown that peasants' household income increased dramatically and the social gap between urban and rural inhabitants has shrunk sharply. This is primarily due to the increased prices of agricultural goods, which, on the one hand, has resulted in higher income of peasants and, on the other hand, inflated prices for urban strata, thereby condensing urban-rural income gap (Nee, 1989).

Elaborating on Szélenyi's arguments, Nee (1989) has proposed the market transition theory (in the following, termed MTT). The MTT maintains that introduction and expansion of market institutions replaces the redistributive mechanisms in the allocation of goods and services. In the market economy, redistribution is based on horizontal relationships between (legally equal) buyers and sellers with prices based on mutual agreements. Thus, the former absolute control of redistributors over resources and power diminishes and shifts to the market participants, and market forces change the incentives of the producers and create new opportunity structures (Nee, 1989; Verhoeven et al., 2005). The restructuring of the property rights reduces “political power in competition over resources with power becoming market-based” (Verhoeven et al., 2005, p. 202). These affect fundamental changes in the socio-

⁵ Inequality in access to privileges (such as housing) and other scarce goods and services might be justified because there was lower differentiation in wages among different occupational classes under the Communist regime.

economic attainment processes, with human capital being a major factor returning benefits in the labor market, whereas the returns to political power atrophy.

In the original manuscript, Nee (1989) derived three coherent theses on which the MTT is grounded. These were (1) the market power thesis, (2) the market incentive thesis, and (3) the market opportunities thesis.

Market power thesis: If surplus is no longer monopolized by the redistributive sector and exchange is market-based, redistributors lose power and control over resources in favor of a market. As a result, price setting becomes market-based (i.e., based on mutual agreements between buyers and sellers), which, in turn, favors producers (Nee, 1989). In this context, the redistributors “experience a relative loss” since their power is transferred to the market. Moreover, they also lose in terms of vanishing returns to political capital (such as party membership, Verhoeven et al., 2005), which was associated with various material and non-material benefits under the Communist regime (Gerber, 2000b).

Market incentives thesis: Redistributive systems reduce incentives as prices are usually below market-based and salaries do not allow for performance-adjustment (Nee, 1989). Market-based prices are considered to be more efficient since they are based on mutual agreement between buyers and sellers, and the direct producers are able to retain a higher share of the surplus (Nee, 1989, p. 666). Accordingly, the introduction of market institutions benefits all market participants, stimulates efforts and raises incentives. Human capital becomes a major criterion for labor market attainment and human capital returns grow.

Market opportunities thesis: The transition to the market economy opens up new opportunities that are above “bureaucratic advancement,” i.e., access to and mobility within the redistributive sector (Nee, 1989; Rona-Tas, 1994). Entrepreneurship provides such opportunities. Additionally, changes in property rights advance returns to private-sector employment, which is likely to be more market-based as compared with the public sector (Nee, 1989). The private sector tends to reward individual efforts, and these result in higher income for the private-sector employees (Verhoeven et al., 2005).

Extending the MTT, Nee and Matthews (1996) claimed that as a result of the growing importance of human capital, gender-pay gap should also wane with the progression of the market reforms. Since the market rewards the effort, women should become more likely to invest in their human capital (see Verhoeven et al., 2005). Accordingly, the overall *gender-*

pay inequalities should diminish in the transition process, and growing returns to human capital investments should favor women.

According to Nee (1991), social inequalities should not increase as the previously disadvantaged benefit from the transition. This argument is premised by (a) compensating advantages and by (b) structural determination (Rona-Tas, 1994). *Compensating advantage* argues that the bureaucratic and market order of coordination each have their own exclusive set of preferred positions. As result, positions disfavored by the bureaucratic regime should be rewarded in the market. The *structural determination* argument, in turn, states that each individual and household has a specific position in the bureaucratic economy. Hence, change in economic order would change rewards attributed to the particular positions since the preferences in position ranking are mutually exclusive between the market and bureaucracy (Nee, 1991; Rona-Tas, 1994).

Nevertheless, the author concedes that market reforms in the urban sector may result in persisting social inequalities because privatization reforms may benefit the redistributors due to their higher information awareness, the availability of resources, and better possibilities of accessing bank credits. Accordingly, the already advantaged would retain their positions resulting in an even “a greater initial continuity in the stratification order” (Nee, 1989, p. 679). Nevertheless, these (network) advantages should decline after the transition period due to the inefficiency of bureaucratic entrepreneurs and the greater importance of transactions between direct buyers and sellers.

2.4 Market transition theory: A critical view

Empirical assessments of the MTT’s implications on social inequality have not yielded unequivocal findings, and the theory has often been criticized (Gerber & Hout, 1998; Rona-Tas, 1994; Verhoeven et al., 2005; Walder, 1996, 2003). Empirical findings have rather pointed to increasing income inequality following the liberalization reforms in former Central and Eastern European (CEE) countries and urban China. Afterwards a decreasing trend in income inequalities can be observed in the CEE countries. In rural China, income inequality first decreased after the reforms and then increased (see Verhoeven et al., 2005 for literature overview).

2.4.1 Empirical testing

Moreover, the “father” of the MTT, himself, did not provide consistent support for the MTT. Beyond the fact that the cadres enjoyed higher average income before and after reforms, cadres have been found to face an additional advantage (net of education) in the case of shifting to entrepreneurial activities (Nee, 1989). However, this has been argued to be a result of an effort that is valued by the market. What is ignored is the fact that the cadres might be able to take an advantage of power and networks in order to profit more from this effort compared with the non-cadres (Walder, 1996). The non-entrepreneur cadres bore an additional household income loss that, however, seems to not be statistically significant. These results, together with positive returns to education (as market “valued” resources), are interpreted as confirmatory evidence for the MTT (Nee, 1989; see Walder, 1996 for criticism).

In contrast to these results, liberalization reforms have been found to have less impact on the modification of control power (Gerber & Hout, 1998). In many cases, managers were able to privatize the firms they ran during the Soviet Union or to retain control over them. Accordingly, former cadres were able to convert their political power into economic benefits probably because of their better access to social networks (Rona-Tas, 1994) and/or due to being a part of the technocratic elite (I. Szelényi & Kostello, 1996). Moreover, beyond human and social capital, cadres are likely to possess skills (e.g., bargaining, brokering, administering) valued in market-like economies. By the same token, the strategic positions of managers during the Soviet Era enabled the acquisition of favorable positions in the newly emerged markets, and these managers were quick to take the advantages in the new corporate segments of the private sector via entrepreneurial activities. Hence, in contrast to Nee’s (1989)’s findings, the introduction of the market forces is found to favor “entrepreneurship and managerial authority” but not to ameliorate human capital returns (Gerber & Hout, 1998).⁶ It seems that in this transition, those who already possessed initial (economic)

⁶ Geber & Hout (1998) conclude that human capital itself appears to be a factor less germane to income attainment during the liberalization reforms in Russia. Yet, one can have reasonable doubts on that claim. Recent meta studies have shown that education was (and is) a decisive tool for career and income attainment in Russia (e.g., Lukyanova, 2010). Social networks as well as personality traits together with individual preferences, cultural norms and demand-side discrimination might be crucial factors on the individual level,

advantages, in particular, gained even more than those without such advantages (Rona-Tas, 1994).

Focusing on income attainment in the transformation processes Verhoeven et al. (2005) also found little support for MTT. Meta-analyses have demonstrated that the returns to political capital increased after the introduction of market forces in (urban) China, thereby providing no support for the market power hypotheses. Nevertheless, since the MTT predicted a relative loss, the hypothesis cannot be fully abolished. Furthermore, there is tentative support for the market incentive hypothesis in regard to the expected appreciation of education. The results underline the fact that human capital returns did not increase after the transformation process in (urban) China. Conversely, income returns to education as well as to labor market experience appear to decrease. For the CEE, the results indicate decreasing returns to labor market experience during the Communist era and increasing returns afterwards, while the returns to education suggest a constant increasing trend during the Communist era (the latter fact is in contrast with MTT predictions). In post-Soviet Russia, there was a rapid expansion in educational returns, which, however, ceased afterwards (Lukiyanova, 2010).⁷ The market opportunity thesis appears to be corroborated for both China and the CCE since the meta-analyses show the positive effect on income of working in the private sector. However, there are no growing advantages with the procession of market reforms. Finally, the gender gap seems to have been growing during the transformation process in China and CEE (not statistically significant) (Verhoeven et al., 2005), and “women seem to have [had] trouble keeping up with the rapidly industrializing economy” (Verhoeven et al., 2005, p. 217). In Russia, women now face difficulties in the new markets (Gerber & Hout, 1998) (see Section 2.5.3).

though human capital seems to be the most important factor on a structural level. In many cases, social and cultural capital may operate not independently but interdependently.

⁷ The absence of the effect, however, might be due to the measurement of education in years instead of degree types (Verhoeven et al., 2005). Such a measurement does not reflect the increased value of academic education compared with vocational education (Flanagan, 1998).

2.4.2 Elaborations and extensions

The problem with the MTT (also see Nee, 1989) is that even after decentralization, if the cadres still possess power over the resources needed for production – such as capital, labor, raw materials, technology, and social networks – the producers would be compelled to bribe cadres in order to gain access to these commodities. This issue has been tackled in further elaborations of the MTT. Nee (1991), for example, argues that the existence of such hierarchical relationships is strongly depended on how far the introduction of market coordination has gone. Additionally, the advocates of the MTT address the importance of the circumstances under which the market reforms are taking place (Cao & Nee, 2005; Nee, 1989, 1991; I. Szelényi & Kostello, 1996). In this sense, the results of the market reforms are contingent on economic efficiency and on how power and privilege (previously held by redistributors) are redistributed during the transition processes from state socialism to the market economy. The rapid economic growth is believed to soften the struggle over power and privileges among various groups of interest. What is more, the more advanced a transition and introduction of market institutions is, the less “room” available for bureaucratic power of cadres is, and the more economic transactions would proceed directly between sellers and buyers (Nee, 1989, p. 668).

As rebuttal to this point, (Rona-Tas, 1994) argues that “erosion of the socialist economy” keeps cadres away from the private sector because such secondary economy does not require higher skills and capital, offers rather small profits, and stills faces many restrictions imposed from above. Accordingly, due to its state dependence, this sector does not directly threaten cadres’ positions (Nee & Oppen, 2010; Rona-Tas, 1994). With the market reform progression, the private sector has been growing in importance – which is inevitably connected with expanded profits. New modern segments of the economy, the possibility of the privatization of state ownership, and opportunities for capital accumulation all develop. Since dependence on the state vanishes, the cadres’ former positions are threatened. As a result of these developments, cadres are attracted by new opportunities in the private sectors, as is outlined in the following section.

2.4.3 Elite reproduction thesis

In contrast to MTT predictions, numerous studies have found emerging benefits of the old elite to be a consequence of the liberalization reforms (Burawoy & Krotov, 1992; Gerber & Hout, 1998; Grossman, 1990; Stark, 1990; see also Rona-Tas, 1994). These growing social

inequalities have been argued to be the results of (a) technocratic continuity and (b) power conversion (Rona-Tas, 1994).

The *technocratic continuity* argument posits that the cadres were able to retain their advantages due to their technocratic qualifications, which are highly germane to and valued in market economies. This argument contradicts the compensating advantages premise (see above) and argues that socio-economic advancement in both market and bureaucracy has meritocratic-technocratic character, and highly skilled technocrats are hence demanded in both economy types. In this sense, human capital is believed to be valued in both market and redistributive economies (though sometimes differently in each), resulting in better opportunities for those with more education. Therefore, since party membership is highly correlated with educational attainment (Gerber, 2000b; Yanowitch, 1977), cadres are likely to be in advantageous positions in the newly emerged markets (Rona-Tas, 1994).

The *power conversion* argument states that cadres are able to convert their political capital accumulated during the bureaucratic economy order into assets and/or economic capital, which is highly valued in the market (Bian & Logan, 1996; Rona-Tas, 1994; I. Szelényi & Szelényi, 1995). In line with this argument, many cadres were able to acquire property rights in Russia over the enterprises they were located in by using informal (valuable) information channels, access to credit, and social networks (Gerber & Hout, 1998; Rona-Tas, 1994). These “privatization of the nomenklatura” processes were partly accomplished by networks gained during the Communist regime (Hughes & John, 2001, p. 673). Such networks are also likely to be worthwhile in the post-Soviet period since the political ruling elite was only changed at the top, while the local low- and middle-level administrators as well as ministers’ personnel have remained in their positions. Having ties to this state apparatus and local administration gave the cadres the possibility of accessing valuable business information, knowledge in regard to the new laws and regulations, and informal rules (Hughes & John, 2001; Rona-Tas, 1994). Accordingly and in contrast to the structural determination argument, individuals adapt to the new conditions and institutions.

Following both arguments, Rona-Tas (1994) demonstrates that former cadres (compared with non-cadres) are more likely to begin corporate and non-corporate entrepreneurship, and this is net of education. Even more, the ex-cadres enjoyed an additional (economic) advantage if they started a corporate business. Among various types of entrepreneurship, only farming follows the logic of the MTT and suggests more egalitarian effects on the social stratification

order. Perhaps this is due to low entry barriers and low skills requirements. In turn, the more progressed types of entrepreneurship, such as corporate businesses (which are also obviously more profitable), imply an exacerbation effect on social inequality (Rona-Tas, 1994). Moreover, empirical research suggests that – other things being equal – party membership is associated with higher earnings, more possibilities for intra-firm mobility, and lower risks of job loss (Gerber, 2012) and of mobility to low-wage branches in post-socialist Russia (Gerber, 2002).

Altogether, the process of elite reproduction in the post-socialist countries seems to be assured via privatization (Hughes & John, 2001; Stark, 1990; I. Szélenyi & Szélenyi, 1995; Tomusk, 2000). Privatization has resulted in the accumulation of the majority of property by few people, while most people have privatized almost nothing. The most powerful and privileged have translated their power capital into wealth because they had excellent education as well as ties and access to positions in which acquired skills and knowledge were also valued in the newly emerged economies (see Tomusk, 2000 for the literature review). Moreover, expanded corruption after the collapse, termed “the transition ‘from nomenklatura to kleptoklatura’ or ‘from plan to clan,’” has empowered former cadres to accumulate even more power than they had before the collapse (Tomusk, 2000, p. 278).

2.4.4 Selection effects

Another explanation for the advantaging effect of cadres is provided by the selection argument (Gerber, 2000b, 2001b). The main claim here is that “some people succeed regardless of institutional context” (Gerber, 2000b, p. 26) and that it is not the political power per se that provided individuals with benefits after the collapse of the Soviet Union, but rather the selection effect into party members. Personal characteristics such as “ambition, career-mindedness, a willingness to submit to organizational discipline, a penchant for organizational and administrative work, and perhaps what might be termed ‘opportunism’ may characterize Party members” (Gerber, 2000b, p. 47). These characteristics were likely to drive individuals to become Party members during the Soviet period and are likely to bring material advantages in the post-Soviet Russia (Gerber, 2001b, 2002; see also Gerber & Mayorova, 2010). The data gathered at the beginning of the transition period provided no unequivocal conclusion. Although selection into the Party before the collapse explained most of the post-soviet income premium attributed to Party membership (Gerber, 2000b), the

slightly different model specification indeed indicated the additional premium of former cadres (Rona-Tas & Guseva, 2001).

From this debate, we may conclude that such personal traits as ambition, opportunism, and ruthlessness are likely to incentivize individuals to acquire career- and non-career-related benefits via entering into the Party but are also likely to promote (economic) advantage in the market economy (Gerber, 2000b). Party membership in turn may itself be a valuable asset in post-soviet Russia, particularly in the first years of transition, when the former administrative elite were still at the helm and social and economic institutions had not yet been reformed (as shown by Rona-Tas & Guseva, 2001; also discussed by Gerber, 2001b).⁸ It seems that this additional political and social capital advantage wanes with ongoing transition (Gerber, 2001b), which was also predicted by the MTT (Nee, 1989).⁹

2.4.5 Interim summary

Altogether, party membership promised material and non-material privileges, access to authoritative positions, and career promotions during the Soviet period. In turn, after the collapse, party members were still better off on average, which was the result of political power and access to information, superior education, valuable skills and administrative expertise, social capital and network ties, as well as specific cognitive and non-cognitive skills. One way or another, those advantaged seemed to be able to adapt to structural changes and accumulate even more advantages.

⁸ It should be noted that although empirical evidence finds a protective effect of party membership for Russia (Gerber, 2012), this might not be the case for other post-socialist economies. For instance, German reunification engendered a punishment effect of party membership in terms of lower income growth but not in terms of job losses (see, Kropp, 1988).

⁹ An interesting finding is that (other things being equal) Party membership increased the probability of finding a job in a finance and insurance sector, which became extremely important and highly paid in post-Soviet Russia. What is more, employers (particularly from this sector) are found to be more likely to rely on social networks for hiring applicants (Gerber & Mayorova, 2010). Though the authors make no reckoning of these facts, these findings might indicate the importance of networks for access to jobs in new expanding economic sectors. The finding that party members who find job on the basis of networks face earnings penalties may mask these important sector distinctions (which are also not controlled for).

2.5 Specificities of the regime change effect: a theory of elite opportunity

Walder (1996) argues that it is not the transition to the market economy per se that affects the allocation of power and income and the stratification order, but rather (1) the conditions under which this transition takes place as well as (2) the kind of a market that emerges. This argument is further elaborated and described in a more detailed way by the “theory of elite opportunity” (Walder, 2003). The main idea behind this theory is that in many cases, post-socialist countries experience their own type of transition to the market, varying from rapid transition to market-like institutions and a degradation of the old political elites (e.g., East Germany) into dictatorship-like economies, with old elites at the helm (e.g., Uzbekistan, Kazakhstan and Kyrgyzstan) and a mix of both (Walder, 2003, fig. 3). This path dependency is likely to affect stratification order and the allocation of income and power in somewhat distinct ways.

Whether and to what extent elites are able to “survive” and to appropriate public assets under new conditions of market economies is contingent on two factors: the extensiveness of the regime change and policies regulating the appropriation of these assets (Walder, 2003). This dependency is summarized in Table 2–1.

The first factor – the extensiveness of the regime change – describes the extent of de-monopolization of political power as well as former elites’ loss of control over resources and over appointments to key positions. In the case of pronounced extensiveness, the party either (a) is completely dismantled with a consequent collapse of elite hierarchies or (b) disintegrates and (in the case of survival) competes with other political parties. The latter case offers meager privileges and socio-economic advancement opportunities for the party members. Low extensiveness suggests the survival of the party via, e.g., a changing orientation towards nationalists. As a result, hierarchies resist and retain control over assets and power to make appointments to key positions. For elite reproduction, regime change reflects the rates of elite turnover: The less extensive the regime change is, the lower the elite turnover rate is. An extensive regime change implies elites’ withdrawal from their positions in favor of lower-ranking members or of non-party members.

The second factor – policy and regulation environment – mirrors the opportunities for elites to appropriate public assets after a regime change. In this context, the pace of the

privatization, regulatory prohibition against the practice, and the degree of asset concentration and liquidity are the major elements that determine the opportunities of elites to appropriate public assets (see Table 2–1). For elite reproduction, this defines the rate at which elites convert their political capital into economic gains and property rights. Strong policies and regulation obviously lower this rate and constrain elites' opportunities for wealth accumulation via "theft of state property."

As Walder (2003) argues, the least favorable circumstances for elites are in the transitional economies of Type 1. On the one hand, the regime change is so rapid that elites lose their positions too fast to be able to use their power for public asset appropriateness. On the other hand, the strong regulations reduce opportunities for privatization. Only superior education and expertise can ameliorate the chances of elites for socio-economic mobility. In contrast, economies of all other types provide rather favorable conditions for elites' enrichment (greatest with Type 4).

It is not obvious where to locate Russia's transition path into the matrix since the regime change was less extensive (see McFaul, 1995) and elites were able to retain their advantageous positions (Eyal & Townsley, 1995; Hanley et al., 1995; I. Szélenyi & Szélenyi, 1995). In regard to the political and regulatory constraints, Russia's privatization lacked a consistent legal framework (Gimpelson, Kapeliushnikov, & Lukyanova, 2010; OECD, 2011a). As result of this privatization, two-thirds of Russia's firms were secured by the regime insiders in 1993 (McFaul, 1995), and an oligarchy emerged that kept a considerable share of the key sectors (Tomusk, 2000). Accordingly, Russia would match with Type 3 if we consider the formal de-monopolization of the party and the changing political structures as well as regulatory privatization environment (Walder, 2003). However, because such a high proportion of former nomenklatura were able to retain their positions and advantages (Eyal & Townsley, 1995), Russia's case may even verge to the economy of Type 4.

Table 2–1: Types of transitional economies and elite opportunity by regime change and policy environments

Extensiveness of regime change	
High	Low
Political/regulatory constraints on asset appropriation	Type 1 <i>Type of economy:</i> Communist hierarchies collapse, losing assets and appointment powers. Ruling party shrinks into electoral party and loses early elections. Systematic privatization is orderly and well regulated, limiting opportunities for asset appropriation by elite. <i>Elite opportunity:</i> High rates of elite turnover in both political and economic organizations. Limited mobility into propertied and corporate elites. Those with higher education and skill more likely to survive in elite salaried posts.
	Type 2 <i>Type of economy:</i> Communist hierarchies survive and continue to exercise power. The Party retains control over appointments and keeps its organization and assets. Privatization is delayed and slow, restricting opportunities for elite asset appropriation. <i>Elite opportunity:</i> Low rates of elite turnover. Cadres retain posts, use them to enhance incomes for themselves and family members, but limits on privatization delays and restricts movement into a new propertied or corporate elite.
	Type 3 <i>Type of economy:</i> Communist hierarchies collapse, losing assets and appointment powers. Ruling party shrinks and loses early elections. Systematic privatization is chaotic and poorly regulated, permitting extensive asset appropriation by elites. <i>Elite opportunity:</i> High rates of turnover in political elite, but extensive opportunities for movement into propertied and corporate elites. Lower rates of downward mobility for old elite. Advantages for the skilled and highly educated are smaller than in Type 1.
	Type 4 <i>Type of economy:</i> Communist hierarchies survive and continue to exercise power. The Party retains control over appointments but privatizes assets. Privatization is directed by old regime elites with few barriers to asset appropriation. <i>Elite opportunity:</i> Low rates of elite turnover. Officials have option of extracting incomes from their posts or leaving their posts as assets are privatized. Formation of new propertied and corporate elite out of the old elite.

Note: Adapted from “Elites in Transitional Economies,” by A. G. Walder, 2003, *American Sociological Review*, 68, p. 905 and p. 907. Copyright 2003 by the ASA. Adapted with permission. For permissions, see Appendix F.

2.6 Social inequality and regime change: Empirical evidence

Sociological interest in how institutional structures shape stratification processes has been growing in recent decades (Kerckhoff, 1995). The expanded availability of cross-comparative micro data has allowed for studying the association of various institutional arrangements with various aspects of social inequality (e.g., Gangl, 2002, 2003; Iannelli & Smyth, 2008; Kogan, Matkovic, & Gebel, 2013; Kogan & Müller, 2003; Saar et al., 2008; Yaish & Stier, 2009). Another body of literature has taken on a dynamic perspective and focused on the countries experiencing change in institutional set-ups and has examined how the regime change has affected social inequality (e.g., Bian & Gerber, 2008; Bian & Logan, 1996; Bukodi & Goldthorpe, 2010; Cao & Nee, 2005; Gerber, 2000a, 2002, 2003, 2012; Hanley et al., 1995; Konietzka & Bühler, 2010; Krueger & Pischke, 1995; Rosenfeld, Trappe, & Gornick, 2004; Saar, 2009). The major appeal here is that “[...] the rapid and far-reaching changes in political and economic institutions [...] offer researchers an especially promising opportunity to gauge the effects of institutions in dynamic settings” (Gerber, 2003, p. 242).

In the following, I briefly review the state of research on the impact of regime changes on patterns of social stratification: (1) social class, social mobility, and educational opportunities; (2) job-related risks and changes; and (3) gender inequalities.¹⁰ Following this, I derive my expectations in regard to the impact of the regime change on social inequalities in Russia.

2.6.1 Class inequalities, educational opportunities and intergenerational mobility

Despite the fact that class as a norm was ignored and “classless society” was proclaimed, Communism produced its own class – the new class of political bureaucrats (Djilas, 1957), i.e., the political and managerial elite (I. Szélenyi, 1978), or the “ruling” class (Eyal & Townsley, 1995). The “second-best” group consisted of the intelligentsia (professionals), followed by industrial workers and agricultural laborers (Eyal, Szélenyi, & Townsley, 2000). Nevertheless, due to wage compressions, the gaps between classes were narrower than in comparable class structures in other industrial societies (Bian & Gerber, 2008; Dobson,

¹⁰ I do not consider the processes of elite reproduction or circulation because this was discussed in the earlier sections.

1977). The transition to the market economy favored class inequality in terms of income in China, while in Russia, these inequalities expanded at the beginning of the transition period but slightly decreased afterwards (Bian & Gerber, 2008).¹¹

Furthermore, the socialist system was unable to eliminate the intergenerational transmission of inequality (Wong, 2002), though it seems to have been less pronounced compared with the Western societies (see Dobson, 1977 for review). Empirical evidence has shown – *ceteris paribus* – strong effect of parental cultural capital (in Russia, Bulgaria, Czechoslovakia, Hungary, and Poland) on children’s occupational attainment status. In Russia, additionally, parental social capital together with an individual’s own social capital and seniority was found to be crucial for socio-economic advancement towards the end of the Soviet Union, implying that the “stratification system was turning into an exclusive network where power and privileges were largely reserved for Communist party members and their children” (Wong, 2002, p. 206) and “favoritism and nepotism was rampant in the Russia society right before its collapse in 1991” (Wong, 2002, p. 216). However, other studies detected high levels of intergenerational mobility with low social inheritance before the collapse of the Soviet Union (Titma, Tuma, & Roosma, 2003). The Cultural Revolution seems to have increased social mobility chances in urban and rural China and reduced thereafter (see C. Buchmann & Hannum, 2001 for review; Zhou et al., 1998). Again, liberalization reforms promoted the growth of social inequalities. With the collapse of the Soviet Union, social fluidity declined in Russia (Gerber & Hout, 2004), Hungary (Bukodi & Goldthorpe, 2010; Robert & Bukodi, 2004; Rona-Tas, 1994), and Estonia (Saar, 2009).

The patterns of inequality of educational opportunity (IEO) was also found to vary over the regime change. For instance, in Czechoslovakia, the IEO decreased after the introduction of Communism but later surpassed pre-Communism levels (Mateju, 1993). Throughout the Soviet period, social background was a crucial factor for educational decisions (Yanowitch, 1977), with remarkable stability over time in Hungary (S. Szélenyi & Aschaffenburg, 1993), Poland (Heyns & Bialecki, 1993), and Russia (in terms of higher education, see Gerber & Hout, 1995; Gerber, 2000a). Nevertheless, empirical evidence infers that state-socialism had a lessening effect on the IEO (Ganzeboom et al., 2009). Similarly, the comparison of East

¹¹ The study measures social class in terms of the Erikson-Goldthorpe class schema (Erikson & Goldthorpe, 1992) adapted for Soviet and post-Soviet Eras by Gerber & Hout (1998).

and West Germany revealed that IEO was less pronounced in East Germany before reunification (P. N. Blossfeld et al., 2015). On the other hand, it has been demonstrated that IEO was more pronounced in socialist countries than in Western countries (Ganzeboom & Nieuwbeerta, 1999).

The transition from socialism to the market economy was accompanied by an increase in educational stratification. In East Germany, the chances of children from lower social strata to attend university deteriorated after the reunification (P. N. Blossfeld et al., 2015). The introduction of liberalization reforms in Russia has also stimulated the growth of the social background based educational inequalities (Gerber, 2000a, 2007). The literature further indicates that social origin continued to be decisive for educational transitions two decades after introduction of liberalization reforms in the CEE countries, and particularly in those that introduced early tracking (Hungary, East Germany and Czech Republic). In Hungary, tertiary education became reserved for higher social strata (Kogan et al., 2012).

2.6.2 School-to-work trajectories and intra-generational mobility

In the following, empirical results on the regime change effect for job-related inequalities at labor market entry and in life course careers are discussed. In this context, the school-to-work transition is the most important stage in one's career because it may frame and even determine subsequent career opportunities. At this stage, educational attainment appears to be the main driving factor affecting patterns of entry into the first (significant) job, while educational inequalities are directly translated into the following life chances. However, the extent to which educational attainment matters is found to vary over institutional contexts (Allmendinger, 1989; Müller & Shavit, 1998). With career progress, the impact of initial education vanishes, whereas other factors, such as labor market experience, accumulated specific skills, job performance and productivity, and networks, come into play. Like the school-to-work transitions, the subsequent career is argued to be shaped by institutional arrangements (Müller & Shavit, 1998).

Under socialism, the educational system was predominantly oriented to serve the purposes of the industrial economy, and the whole system worked in a streamline process, assuring maximum usage of human capital (Gerber, 2003; see Chapter 3 for the institutional description of Russia). Compared with Western societies, the link between education and the first occupation was even stronger (Solga & Konietzka, 1999), resulting in smooth, short, and secure transitions from school to work (Gerber & Hout, 1995, 1998; Gerber, 2003; Saar et al.,

2008; Saar, 2005). In the aftermath of liberalization reforms, this strong former link vanished in most post-socialist countries.¹² The school-to-work transition phase became much less secure, with longer search periods and a shorter duration of the first job as well as higher risks of job loss (Bukodi, 2009; Kogan, Noelke, & Gebel, 2011; Konietzka & Bühler, 2010; Täht et al., 2009). These risks were particularly pronounced for lower-educated labor market entrants (Kogan & Unt, 2005), implying a widening of social gaps due to initial education (Bukodi, 2009; Kogan et al., 2011; Täht et al., 2009). The risks of entry into a job below the attained level of qualification substantially increased after the collapse (Bühler & Konietzka, 2011; Bukodi, 2009; Kogan & Unt, 2005 for Hungary and Slovenia; Täht et al., 2009). Finally, many more labor market entrants were compelled to enter precarious employment (Bukodi, 2009; Robert & Bukodi, 2005).

Turning to the career process, the state socialism supported stable life-long careers, moderating a high level of stability and security (see Dobson, 1977 for review; see also Chapter 3). However, the literature is not so unanimous about regime change effects on the career paths, as in the case of labor market entry. A comparative study on post-socialist economies implies remarkable differences in mobility rates among four countries (Belarus, Estonia, Russia, and Ukraine). Belarus (with the lowest levels of upward mobility) and Estonia (with the highest levels) represent extreme cases. These differences are explained with a degree of transition towards market economies: Belarus proceeded as a command economy, and Estonia showed a rapid transition towards a market economy (Titma & Roots, 2006). Single-country studies also suggest some variation in intra-generational mobility patterns. For instance, although labor market mobility grew in Slovenia, it was predominantly “directed towards the quantitative adjustment of employment,” such as intra-firm mobility as well as exits to unemployment and to retirement (Ivančič, 2000, p. 421). In post-Soviet Russia and East Germany, significantly more individuals were downwardly mobile than upwardly mobile (Diewald, Goedicke, & Mayer, 2006; Gerber & Hout, 2004). Similar albeit less dramatic results were found for Poland (Mach, 2004). On the other hand, the regime

¹² However, Gerber (2003) finds no impact of the regime change on the school-to-work transition phase in terms of the association between education and the first occupation.

change opened opportunities for self-employment, which become a path to upward mobility in terms of income (Gerber, 2001a).

The transition from socialism to liberalized market economies impeded but also advantaged the youngest cohorts. For instance, youngest cohorts faced many obstacles in terms of unemployment risks and job instability in Slovenia (Ivančič, 2000). On the other hand, they were more likely to enter self-employment in Russia (Gerber, 2001a) and to experience upward mobility in Slovenia (Ivančič, 2000). In the literature, young cohorts are even labeled as the “winners of transition.” In East Germany, younger cohorts were better off compared with older cohorts, particularly due their higher flexibility, which appeared to pay off more than did the (labor market) experience of the older cohorts (Kropp, 1988) (Diewald et al., 2006). Similarly, in Russia, well-educated young men benefited from new opportunities that were prompted by the emerging private sector (Brainerd, 1998).

2.6.3 Gender inequalities

Socialism saw gender equality as an essential instrument for industrialization. For these purposes, various policies reducing the conflict between and supporting the combination of family and employment promoted females' labor participation (Pascall & Manning, 2000). In some cases, Communism was quite successful in promoting gender equality (Dilli, Rijpma, & Carmichael, 2014), particularly via granting equal opportunities for men and women in education (Gerber & Schaefer, 2004; Gerber, 2007). Gender parity in regard to labor participation (Katz, 2001) and in terms of socio-economic status was achieved (Wong, 2002). Nevertheless, it should be noted that equality in participation rates does not automatically imply wage equality. Similarly, higher socio-economic status does not automatically denote higher wages: many female-dominated jobs, such as teacher, were characterized by high prestige but lower wages. Women were furthermore found to be overrepresented in white-collar jobs although they belonged to lower non-manual groups, whereas men were overrepresented in the top of occupational hierarchy (Titma et al., 2003). The fact that women endured lower average wages than men under socialism is well-established in the literature (Brainerd, 2000; Gerber & Hout, 1998; Katz, 2001; Kranz, 2005; Lapidus, 1976; McAuley, 1981; Shu & Bian, 2002; Vinokur & Ofer, 1985; Yanowitch, 1977). Moreover, women faced obstacles in access to top positions (Lapidus, 1976; McAuley, 1981; Yanowitch, 1977) and were virtually absent in the political elite (Eyal & Townsley, 1995; Hanley, 2003; Kranz, 2005; Lapidus, 1993; Walder, 1995; Wong, 1996).

Studies on the impact that liberalization reforms had on gender differences did not provide clear-cut conclusions. With the collapse of the Soviet Union, both men and women exited labor market due to growing unemployment, but women appeared to gain better access to employment (Gerber & Mayorova, 2006; van der Lippe & Fodor, 1998). Post-Communist gender inequalities in terms of managerial positions decreased in China but remained quite stable in Russia, whereas gender income inequalities were stable and pronounced in both countries (Bian & Gerber, 2008; see also Brainerd, 2000; Gorodnichenko et al., 2010). In turn, East European countries suggested narrowing the gender wage gap after the collapse (Brainerd, 2000).

Compared with men, women (with similar traits) face fewer opportunities for self-employment (Gerber, 2001a), for inter-firm mobility, and for high-quality shifts, and they face a greater risk of low-quality shifts in post-Soviet Russia (Gerber & Mayorova, 2006; Gerber, 2002). Although Russian men are more likely to work in an informal relationship (shadow economy), the probability that such informal work relations are initiated by the employer (and not by the employee's desire) is higher for female workers (Bessudnov, 2011). In Estonia, women have lower incomes than men, and the income gap even increased with the procession of reforms (Titma, Tuma, & Silver, 2013; Titma, 1997). On the other hand, the results from the other study for Estonia revealed far better labor market opportunities for women in the cohort that finished its studies just before the collapse of the Soviet regime: The gender gap in entrepreneurial and managerial activities decreased, and women outcompeted men in white-collar occupations (Titma, Roots, & Soidla, 2009). A comparative study on Bulgaria, the Czech Republic, Hungary, Poland, Russia, and Slovakia revealed that after the collapse, women enjoyed more stable careers, but they were also less likely to be upwardly mobile than men (van der Lippe & Fodor, 1998). Finally, the gender equality index exhibited a growing trend during socialism but dropped with the introduction of market reforms (Dilli et al., 2014), suggesting a widening of the social gap between sexes.

2.7 Guiding hypothesis: social inequalities and regime change in Russia

The Communist regime proclaimed an elimination of social inequalities through the equalization of opportunities based on the effort (labor investments). "From each according to his ability, to each according to his need" became a compelling slogan of socialism. Despite this, various forms of inequalities persisted under the Communist regime, as my

literature review has shown. Nevertheless, it is obvious that the magnitude of these inequalities was lesser in its extent compared with the capitalist economies (Whyte, 1975).

According to the MTT, transition to the market economy promised an attenuation of returns to political power and a rewarding of effort and productivity and, as result, a reduction of social inequality. However, the extensive literature review in this Chapter revealed that the reality looked somewhat different in Russia, and in many cases, a persistent or growing disadvantage for the previously disadvantaged was found, whereas those in advantageous positions gained even more. Access to social networks and growing informal relationships, personality traits together with own preference, culture and discriminative practices of employers seem to contribute jointly to the growing social gap between various groups of individuals. Furthermore, the transition from a rather egalitarian and homogeneous society to a more heterogeneous one involved an exacerbation of social inequalities. Moreover, individual differences become even more decisive for economic and social success (cf. Mayer, 2006). Accordingly, the guiding hypothesis of my thesis is that *the (net) social gap between various groups of individuals opened up or enlarged after the regime change in Russia*.

To test my guiding hypothesis, I conduct three empirical case studies and approach social inequality in terms of gender inequalities and differences (Chapter 5), inequality of adult-educational opportunity (Chapter 6), and consequences of adult education for intra-generational mobility (Chapter 7). My intend is not disentangling the reasons for growing social inequality in Russia, which would also not be feasible with the data at hand. Instead, I aim to explore and quantify the development of social inequality in a broader institutional context. Nevertheless, the concluding section (Chapter 8) discusses potential reasons for changing patterns of inequality in Russia.

Chapter 3

Russia during and after the Soviet Era: The role of institutions over the life course

3.1 Introduction

I study the regime change impact on social inequality based on three case studies: (1) horizontal and vertical gender differences and inequalities at labor market entry, (2) the impact of initial educational and occupational resources on access to formal adult education, and (3) role of adult education for lowering inequalities due to initial educational and occupational attainment. These case studies incorporate school-to-work transitions at the career start and school-to-work as well work-to-school transitions in the adult life course phases.

As discussed in the previous chapter, individual actions and outcomes of job allocation processes are embedded in and shaped by the institutional and cultural set-up of countries. The “allocation model” of status attainment purports that individuals are allocated by the educational system and the economy to various social positions (Kerckhoff, 1976, p. 369). In this regard, educational systems specify the weight of credentials in the recruitment process, while employment systems provide or restrict opportunities for occupational mobility (Saar et al., 2008; Scherer, 2004). The welfare state model describes the role of the state in covering individual risks and needs (Esping-Andersen, 1990; Fenger, 2007; Ferree, 1995). Welfare policies may facilitate or impede a combination of various life domains, such as education, career, and family (Leisering & Leibfried, 1999). Additionally, specific attention should be given to the gender culture and to state policy in regard to women’s position in society. These characteristics are essential factors in shaping gender-typical educational and labor market trajectories (Mandel & Semyonov, 2006).

Altogether, the interplay of the institutional settings described above should be considered when talking about inequality patterns and their association with the regime change in Russia. Accordingly, in the following, I present institutional and cultural arrangements in Soviet Russia and how these arrangements developed after the collapse of the Soviet Union.

Specifically, I focus on educational and employment systems as well as on welfare regime and gender culture.

3.2 Main characteristics of the Soviet educational system¹³

In Soviet Russia, education was a “vital collective resource for building Communism” (Gerber, 2003, p. 245) and was aimed at bolstering industrialization.¹⁴ In this sense, the perfect link between qualifications and occupations was seen as a primary aim and criterion for an efficient functioning of both the educational system and the organization of labor. To achieve this goal, the educational system was fully institutionalized, centralized, and heavily controlled by Soviet authorities. It was further characterized by a *high level of standardization* with defined enrollment targets, a mandatory curriculum, budgets, and teacher training.

Education was *strongly vocationally oriented* and aimed at creating a supply of skilled workers according to economic needs, which, however, were defined by the Soviet planners and not based on labor market demand (Gerber, 2007). Employers were bound per legislation to follow strict guidelines regarding the qualifications of job applicants and desired positions and salaries (Gerber, 2003). Accordingly, credentials played a crucial role in the labor market, opening some career pathways and closing others.

An important distinct characteristic of the Soviet educational system was *state-administered school-to-work transition*, with mandatory three-year job assignments from almost all educational institutions according to the aims and intentions of the Soviet regime (Gerber 2003). The system functioned as follows: Soviet firms had to make a request (about two years in advance) with regard to required labor force profiles. The state reviewed this information and distributed it to the specific “distribution commissions” in each educational

¹³ The following description of the educational system in Russia is based on the rigorous review of various official documents from Russian authorities (Ministry of Education, 2000; NIC ARM, 2012), international reports regarding educational system in Russia (GU VShE, 2010; Hoskins, Cartwright, & Schoof, 2010; IQAS, 2009; NORRIC, 2005; OECD, 2010) and empirical research on education in Russia (Cheidvasser & Benítez-Silva, 2007; Gerber, 2003, 2007; Kapeliushnikov & Lukiyanova, 2010; Kogan et al., 2012).

¹⁴ The Soviet educational system (which, in fact, still exists despite having been slightly transformed) was designed at the end of 1930s.

institution. In turn, these distribution commissions made decisions regarding jobs assignment and student allocation (see Gerber, 2003 for details). Correspondingly, these state-governed systems of school-to-work transition led to a stable, strong link between the educational system and the labor market (Bühler & Konietzka, 2011; Gerber, 2003). Graduates were obliged to accept an assigned workplace for (at least) several years, even if this meant moving to another city or a remote area (Khokhlova, Kozlovskiy, & Veits, 2013).

The educational system was (and factually is) characterized by a *high level of stratification* that began after compulsory education (grades I-VIII; after 1989 grades I-IX). In addition to direct entry into the labor market (mainly into lower non-manual jobs, Gerber, 2003), school leavers could pursue their education in an “academic” or “vocational” track. The vocational track included two main options, namely lower vocational and secondary professional education, while the academic track was a continuation of general education, the successful completion (grades IX-X, after 1989 grades X-XI; according to ISCO-98, upper secondary level) of which opened access to higher education as well as to some programs of secondary professional education (see below). The vocational track included two main options, namely lower vocational and secondary professional education. In the following, I briefly discuss these different options of acquiring professional education.

Lower vocational education (according to ISCO-98, primary vocational education) was aimed at the training of skilled manual workers to acquire professional qualifications. The programs of this type were offered by Professional-Technical Uchilishche (PTUs) and, since 1970s, have been offered by Secondary Professional-Technical Uchilishche (SPTUs). In contrast to PTUs, programs in SPTUs incorporated a general education component (an educational program of general secondary school) and gave their graduates an upper secondary degree in addition to vocational certificate. Lower vocational education was mainly obtained on the basis of lower secondary education, but there were several programs that required an upper secondary degree. The duration of the education varied between 1 and 3 years, depending on the program type and initial educational attainment (entry after lower or upper secondary education). Graduates of primary vocational training institutions were granted a qualified worker degree and could enter the labor market but were able also to proceed with their education. PTU graduates could pursue their education in secondary professional education, while the qualifications obtained in SPTUs formally opened access to higher education. Nevertheless, the continuation into higher education was a rather rare event

due to different official and non-official constraints (Gerber, 2003, 2007; Titma & Saar, 1995).

Secondary professional education (according to ISCO-98, tertiary education of non-university level)¹⁵ could be obtained in Specialized Secondary Educational Establishments (SSUZs) that trained low- and mid-grade non-manual workers. This type of education could be obtained in institutions of vocational training (Uchilishche), technical education institutions (Technikum), and colleges (beginning in 1989) and encompassed a duration of 2 to 5 years on the basis of previous educational attainment. Accordingly, some programs could be completed immediately after compulsory school, but others required upper secondary degree. Technical institutions offered training in technical and business professions, whereas the aim of the institutions of vocational training was to train mid-level non-manual professionals in areas such as services, teaching, health, culture, and art. Colleges were considered to be more “prestigious” (and the most competitive, IQAS, 2009) and offered advanced programs with a duration of one year after the completion of a technical or professional program. Successful completion of secondary professional educational programs was awarded with the Diploma of Middle Level Professional Education and led to the middle professional qualification degree. The completion of advanced professional training at college earned an additional professional title called “Junior Engineer”. Qualifications that could be obtained through secondary professional education included technicians, work managers, clerks, accountants, preschool/primary school teachers, nurses, midwives, and laboratory technicians. Graduates entered the labor market but could also access higher education with recognition of one year of credits (however, only 5% did so, Titma & Saar, 1995).

Higher education could be obtained in institutions equivalent to a university and was designed to train professionals and skilled experts. Institutions of higher education (VUZs) included universities (8%), institutes (80%), academies (1%), uchilishche (9%), and conservatories (2%). In these types of institutions, there were no differences regarding terms

¹⁵ It is important to note that “secondary” is a direct translation of “srednee” – the Russian name for this type of professional education. However, the meaning is not secondary, but rather middle-level professional education, which is identical to the tertiary education at the non-university level according to the ISCED-98. In this thesis the term secondary professional education is used.

of admission requirements, academic standards, and awards (IQAS, 2009). Universities offered courses in science and humanities; institutes were oriented towards applied sciences such as medicine, agriculture, economics, teacher education, technology, and aviation; academies were mainly dedicated to academic research; and conservatories were oriented towards higher education in music. Some Uchilishche offered programs in higher education with courses in engineering, military, and theater. Admission to higher education based mainly on an entrance examination and was highly competitive (Gerber & Hout, 1995). Studies in higher education typically lasted 5 years, and successful completion was rewarded with a Specialist diploma. Graduates could practice in their profession or continue on to doctoral studies.¹⁶

In regard to the attainment levels, the Communist regime was very successful in illiteracy eradication (Zajda, 2003), and the human capital accumulation of the Russian population constantly grew across cohorts (see Gerber & Hout, 1995, pp. 628–629). The proportion of the population with tertiary education expanded during the socialist period: During the 1970s about 25% and 9% of the graduates entered their first job with secondary professional and higher education, respectively, and in the 1980s, these figures increased to 30% and 18%, respectively (Bühler & Konietzka, 2011, p. 307). With regard to the gender aspect, women had already surpassed men in terms of educational attainment in the 1970s, and they exhibited a strong shift towards tertiary education (Gerber & Schaefer, 2004; Gerber, 2003).

3.3 The educational system after the collapse of the Soviet Union

In Russia, the regime change affected political, economic, and social life in general and dramatically changed the patterns of people's lives. However, more specifically, this change took place in the fields of education and the labor market due to the government's focused endeavors to improve the situation in these spheres and to reintegrate them into the tremendously changed economy. The changes in the educational sphere were more inert, particularly due to this sphere's low priority during the turbulent transition times. This resulted in a lack of adequate financing, emerging problems with national educational

¹⁶ There were some important constraints for the medical sciences: graduates of medical educational institutions had first had to undertake further comprehensive professional training with a duration of 1-4 years (internatura or ordinatura) in the medical institution in order to have the right to practice their profession independently.

standards and school budgets, and administrative chaos (Gerber, 2000a; Myant & Drahokoupil, 2011).

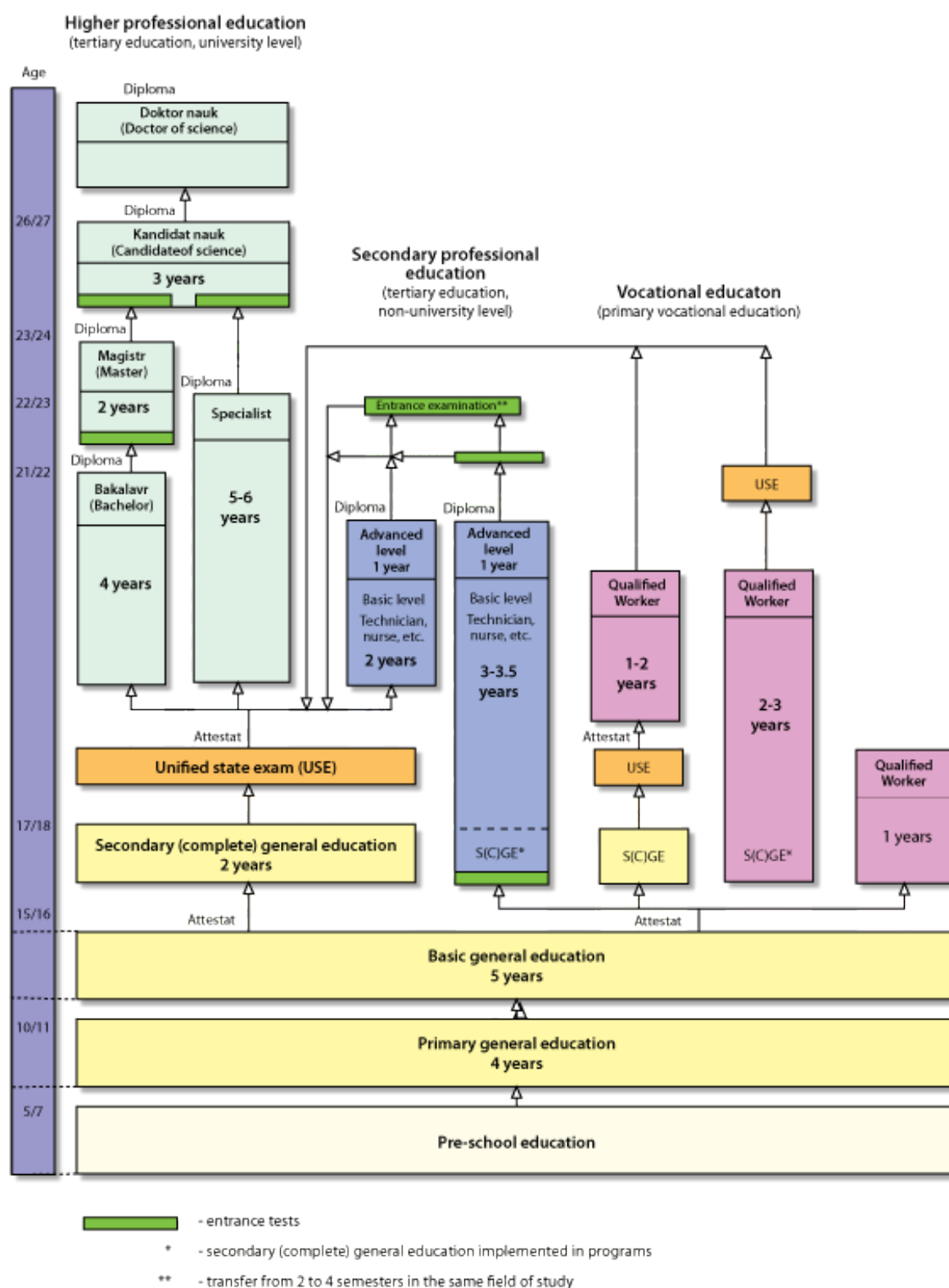
3.3.1 Continuity and change

Some new endeavors have taken place since the early 1990s, and educational reform is still on the move. The most prominent events include the fact that the state monopoly on education was eliminated, the mandatory job assignment was abandoned, and the whole system was decentralized, leading to a growing autonomy of educational institutions and teachers. These changes, however, resulted in reducing previous certainty for the graduates regarding future employment plans (Gerber, 2003). A host of new programs were launched in the existing universities, and public universities were allowed to enroll fee-paying students. This, together with a rapid growth of private universities, influenced expanded enrollment rates in tertiary education in the middle of 1990s (e.g., Lukiyanova, 2010). During the following decade, the number of students in tertiary education institutes doubled (Frumin, Kuz'minov, & Semenov, 2013).

Figure 3–1 depicts the structure of the modern educational system in Russia.¹⁷ Overall, the formal structure of the Russian educational system did not change compared with the Soviet system. The formal educational system in Russia consists of two types of educational programs: general and professional education (see yellow and pink/blue/green parts in Figure 3–1, respectively). General education includes pre-school, primary, lower secondary (basic general), and upper secondary (complete general) education. Professional education involves all formal programs, which afford the right to practice a profession and include (primary) vocational education, secondary professional education, and higher professional education as well as doctoral study programs (NIC ARM, 2012).

¹⁷ It is important to mention that in the scope of this thesis, the period of analysis covers the post-Soviet period until 2005. Consequently, the latest reforms in the sphere of professional education in the year 2013 are not relevant and will not be discussed in the following.

Figure 3–1: Structure of the educational system in Russia



Note: Adapted by Gordey Yastrebov from Ministry of Education and Science of the Russian Federation. National Information Centre on Academic Recognition and Mobility Center (NIC ARM, 2012). For permissions, see Appendix F.

One of the most important changes in educational system regards an introduction of the Unified State Exam (USE) in schools (obligatory for the 11th graders) in an attempt to assure equal access to higher education. The USE was introduced in the Russian Federation in 2009 (since 2001 on an experimental basis in some regions). Based on the results of the USE, the students are awarded a Certificate of upper secondary education and these results (scores) appear to be the sole criterion for giving students access to the higher education. Additionally, since 2007 some regions have introduced 11 years of compulsory secondary education on an experimental level (NIC ARM, 2012). Receiving an upper secondary education is currently compulsory nationally (UNESCO International Bureau of Education, 2011).

In line with the Bologna process, several further degrees at the level of higher education were adopted in Russia between 1992 and 1993 (IQAS, 2009). Accordingly, students have the opportunity to attain four degrees at the tertiary university level: Intermediate Diploma (2 years of Bachelor or Specialist program); Bachelor degree (4 years); Specialist Diploma (5 years); and Magistr (Master) Diploma (2 years). Magistr studies require a bachelor degree. The first two degrees are more or less prerequisites for continued studies and comprise more generally oriented education. The latter two degrees offer two options for graduates: exercising their profession or entering doctoral studies.

There are two critical trends concerned with education in post-Soviet Russia. On the one hand, in formal education, Russia has one of the highest levels of accumulated human capital in the world, even when compared with countries with the same GDP per capita revenues (Barro & Lee, 2001).¹⁸ Slightly above half of the Russian population holds tertiary degrees

¹⁸ It is important to mention that in the ISCED-97 classification, secondary professional programs are defined as ISCED 5b level (tertiary education of non-university level), and higher education programs are defined as ISCED 5a level (tertiary education of university level). However, Nordic countries do not generally assess secondary professional education as being comparable with the ISCED 5b level programs offered in these countries (NORRIC, 2005). The reasons behind this include the maturity of graduates, teaching methods, the length of programs, historical change, position in the educational structure, and quality assurance (NORRIC, 2005). Nevertheless, Russian authorities and empirical literature advocate that these programs are comparable with the ISCED 5b levels (Cheidvasser & Benítez-Silva, 2007; Gerber, 2007; Kapeliushnikov & Lukiyanova, 2010; Kogan et al., 2012; NIC ARM, 2012). To account for these controversial factors, the empirical part of this thesis considers these types of education separately and accounts for these differences when interpreting the

(and particularly women),¹⁹ and the average educational duration is above OECD level (OECD 2012). Even more, the authors of the analytical report on Russian education conclude that having a certificate of a tertiary degree became a “social norm” (M. Larionova & Meshkova, 2007). On the other hand, various Russian surveys indicate that employers consider “having a diploma” to be a prerequisite for entering a job, but they do not consider a diploma to be a signal of the quality of the employee’s skills or knowledge (Krasil’nikova & Bondarenko, 2007a, 2007b). In other words, for employers, a certificate is more of a standard criterion than a selection criterion and does not guarantee a working place (Dubin, Gudkov, Levinson, Leonova, & Stuchevskaja, 2004; Kljachko, 2006; Lukiyanova, 2010), suggesting that education in Russia has become necessary but not sufficient. The mechanisms behind these processes are discussed in the following section.

3.3.2 The role of the certificates in the modern Russia

Although there was a rapid growth of returns to education in the 1990s, at the beginning of the twenty-first century, the growth of returns slowed down and returns then decreased (e.g., literature review of Kapeliushnikov, 2011; meta-analyses of Lukiyanova, 2010). To understand this phenomenon, we might first look at the wage system during the Soviet period. In the Soviet Union, there were no competitive labor market and wage system, and the worker’s allocation was completely defined and regulated by the central planning system, which favored blue-collar workers (Inkeles, 1950). Factually, the government created monetary and non-monetary incentives for low-qualified workers in order to attract them to the heavy industries and military complex (Gerber & Hout, 1998; Katz, 1997). As result, the correlation between education and monetary returns was low.

The transition to the competitive labor market system in Russia was accompanied by the “great human capital reallocation” (Sabirianova, 2002), with an almost instant massive devaluation of the skills and knowledge obtained under the “old” system (Kapeliushnikov & Lukiyanova, 2010). At the same time, decision autonomy on wages shifted to firms, thereby

obtained results. Table A–1 in Appendix A provides an overview of the Russian equivalent of the educational attainment with the corresponding ISCED-97 level.

¹⁹ For gender differences in educational attainment, see, e.g., Gerber (2003, pp. 256–259) and Ogloblin (2005a, fig. 14).

inducing growing returns to education. Furthermore, higher returns to education in the first years of transition suggest a growing demand for higher-educated workers (particularly in the service sector). This, in turn, can explain expanded enrollment rates in tertiary education in the middle of 1990s (Kapeliushnikov & Lukiyanova, 2010). However, later empirical research indicates that the *expansion of the tertiary sector overcame the demand of the labor market* (M. Larionova & Meshkova, 2007), leading to *high education-occupation mismatch rates* (Kapeliushnikov, 2011) and resulting in a *reduction of labor market payoffs in post-soviet Russia* (Lukiyanova, 2010).

Compared with other transitional economies, Russia was characterized by the “medium” returns to schooling after the liberalization reforms (Flabbi, Paternostro, & Tiongson, 2008). Fleisher, Sabirianova, and Wang (2005) suggests that monetary returns in the early reform period in Russia more than doubled compared with the pre-reform period and increased further in the later reform period. In contrast, the other longitudinal study on monetary returns to education concluded that there was only small improvement during ten years of the transition period and that the returns in Russia are far behind the returns found in other developed countries (Cheidvasser & Benítez-Silva, 2007). Unfortunately, to my knowledge, comprehensive comparative empirical research on the returns to schooling in the contemporary Russia is non-existent. Nonetheless, Russian experts indicate that the monetary returns to vocational and higher education are smaller in Russia than in other countries (Kapeliushnikov, 2008).

Another trend is that almost 30% of Russian workers consider skills and knowledge obtained during the initial educational attainment process to be inappropriate or even useless, and one in four people has never used the qualification they obtained (Kapeliushnikov & Lukiyanova, 2010). The low quality of formal education in Russia can probably explain such underutilization of human capital (Agranovich, Kovaleva, Polivanova, & Fateeva, 2009). The indirect evidence for the low quality of education can be seen in the performance of Russian students on international tests: TIMSS and PISA results suggest that Russian students suffer from a lack of knowledge and practical experience and are less able to apply their obtained skills outside the educational system (Agranovich et al., 2009; Kapeliushnikov, 2008). In line with this finding, Russian employers report that the new employees require additional occupational training to be “useful” to the employers (Krasil’nikova & Bondarenko, 2007a, 2007b).

In the area of professional education, no significant reforms were introduced after the collapse of the Soviet Union (Frumin et al., 2013). Correspondingly, institutions and educational standards did not conform to the demands of the new economy (Gimpelson, Kapeliushnikov, & Lukyanova, 2009; Tan, Savchenko, Gimpelson, Kapeliushnikov, & Lukyanova, 2007). Moreover, the system of professional education has become much less vocationally oriented, with a low involvement of employers in the development of professional standards and requirements and a lack of employers' interest in the cooperation in (for example) further education and apprenticeship (Krasil'nikova & Bondarenko, 2007a, 2007b). The growing sector of private institutions and paid services in vocational education has become more oriented towards the demands of students than the demands of the labor market (M. Larionova & Meshkova, 2007).

Altogether, these trends let us to conclude that communication and cooperation between the state, educational system, and the labor market has almost disappeared so that the system of professional education largely lost its link to needs of the labor market. By virtue of these developments, the previously tight link between education and the employment system has blurred, and credentials have lost their signaling power (Gerber, 2003). Furthermore, the excessive supply of tertiary graduates has initiated "credential inflation" (Collins 1979) and a subsequent reduction of the labor market payoffs in post-Soviet Russia (see Lukyanova, 2010). Such credential inflation and the growing need for internal firm training reveals that skills and knowledge produced by the educational system tend to be of more general nature in post-Soviet Russia (Bol & van de Werfhorst, 2013; Kosyakova, 2014). Perhaps this general nature of human capital explains the failure of the Russian educational system to produce a highly qualified labor force not only in terms of the amount of tertiary diplomas, but also in regard to the *de facto* skills and knowledge.

The final issue that is discussed in the scope of the aforementioned developments is related to their consequences for the school-to-work transition. Educational certificates serve as an effective instrument for screening job applicants because they possess a signaling value of individuals' acquired knowledge and skills. The higher this signaling value is, the lower the insecurity that employers face with regard to job applicants' future productivity and suitability is (Müller & Gangl, 2003). In countries with educational systems providing standardized and occupation-specific certificates, rational employers rely on school qualifications to a greater extent because it is very likely that these qualifications resemble the true skills and productivity required for a specific job. Vice versa, in countries in which

credentials provide less transparent information (signals), employers might be more prone to (additionally) rely on other productivity signals (e.g., previous labor market experience, Gangl, 2001) or ascriptive characteristics (e.g., gender, race, Chang, 2000) in their hiring decisions.

3.4 The employment system under the Soviet regime

The Soviet economic scheme was based on (5-year) plans with production goals and required resources, while labor was one of the main parts of these resources. Accordingly, Soviet ideology emphasized the intrinsic value of work and propagandized its contribution to economic independence, social status, and personal satisfaction. Not working was prohibited by legislation and could lead to imprisonment (Ahlander, 2001). According to Soviet officials, unemployment was eliminated by the end of 1930s (GOSKOMSTAT USSR, 1988), whereas empirical evidence reports unemployment rates of 1.2% in the mid-1970s, which was, however, quite low compared with other capitalist societies (Gregory & Collier, 1988). Employment was guaranteed with very high level of social security for all social groups (Buchholz, Hofäcker, & Blossfeld, 2006; Standing, 1996). A rigorous planning of labor and the setting of wages assured the efficient functioning of the system. Nonetheless, labor allocation often functioned based on market mechanisms, particularly after the Stalinist period (Marnie, 1992).

Although workers were generally free to change their jobs and employers were generally free in their hiring decisions (Clarke, 1999, p. 13),²⁰ workers' mobility was rigid and not desirable. This rigidity was assured via employers' control of their personnel planning and sanctions for high external firm mobility (Uunk, Mach, & Mayer, 2005, p. 395). Moreover, workers were encouraged to stay in the same workplace by means of enterprise-based privileges for longer working records. Soviet ideology further considered stable careers to be a sign of social status (Clarke & Donova, 1999; Clarke, 1999; Dmitriev & Maleva, 1997). Strong boundaries between occupation and qualification level limited occupational and job mobility (Huinink & Solga, 1994). Finally, access and nomination to the key (administrative) positions was completely controlled by the party (Gregory & Kohlhase, 1988), and

²⁰ The administrative allocation of labor was mainly concerned with those leaving educational institutions and senior positions.

occupational mobility was primarily “subject to political control and to changes in policy” (Huinink & Solga, 1994, p. 238), while individual choices were rather restricted.²¹

In order to match the plan’s requirements, the state used monetary and non-monetary incentives as a principal allocation mechanism of individuals to occupations, industries, and regions (Clarke, 1999; Gregory & Kohlhase, 1988). For instance, the high-priority sectors (heavy industries, mining, and military complexes) were characterized by much higher average wages compared with similar jobs in low-priority sectors (light industry and services) (Gerber & Hout, 1998; Katz, 1997; Yanowitch, 1977). Nonetheless, individual wages depended on centrally set wage scales and bonus regulations as opposite to firms’ decisions (Katz, 1997). Wages further correlated with political loyalty to the party (Gregory & Kohlhase, 1988). Strong wage compression between less skilled and highly skilled jobs also affected the low correlation between schooling and wages: Empirical evidence indicates that wage returns to education were much lower than in the capitalist economies (Ivančič, 2000; Katz, 1997). Another source of administrative allocation included privileges (access to scarce goods and services, housing, and utility subsidies) that were mostly accessible to those in higher positions and/or those with longer working histories (Clarke, 1999; I. Szelényi, 1978; Yanowitch, 1977). However, the idea behind this was not to encourage employees’ performance, but to assert party control over responsible positions (Gregory & Kohlhase, 1988).

3.5 Towards the labor market: liberalization reforms and post-industrial restructuring

Radical liberalization reforms in post-Soviet Russia accompanied by a “transition shock” were associated with increasing labor market uncertainty and stimulated a considerable restructuring of the labor market due to massive military leaves, the implementation of new technologies and the re-orientation of firms, the growth of new professions, the changed role and functions of the old professions, and the destruction of some economic sectors and the creation of new ones (Gerber & Hout, 1998; Gerber, 2002). Many qualifications and skills

²¹ From the workers’ perspective, low labor turnover and rigid mobility were also desired due to intrinsic motivation (the workplace was often seen as a “second home” and co-workers as a “second family”), and the social safety net was often linked to the working record in the enterprise (Clarke & Donova, 1999, p. 213).

obtained under the “old” system became obsolete and inadequate, which led to an instant, massive devaluation of the human capital accumulated previously (Kapeliushnikov & Lukiyanova, 2010). These processes of overall economic and market developments induced a great deal of unplanned job mobility and significant changes in life courses (Sabirianova, 2002). In the 1990s, the “great human capital reallocation” took place, whereby more than 40% of Russian workers changed their occupations. In this reallocation process, considerably more moves were downward and fewer moves were upward compared with the Soviet patterns (Sabirianova, 2002).

Between 1991 and 1997, the gross domestic product dropped by 40%. The liberalization of prices instigated a hyperinflation in 1992 (1,100%), and nominal wages increased while real wages dropped. Prices grew four times faster than the average wage (Gerber & Hout, 1998, p. 4). As a matter of fact, after the collapse of the Soviet Union, an ultimately new field of private entrepreneurship (which is crucial for the market economy) began emerging from the zero point (it did not exist under the Communist regime). Private-sector employment grew and constituted about 40% in 1997.

Although unemployment rates increased (from 5.2% in 1992 to a peak of 13.3% in 1998), they were (and are) generally low and stable and mostly unaffected by economic fluctuations. In the course of labor market restructuring, Russian firms did not adapt to the economic situation through layoffs, but rather through the reduction of real wages, wage arrears, unpaid leave, and reduced working hours. However, such an adaptation strategy did not facilitate enterprise restructuring, supported inefficient firms, and kept large segments of less productive and technologically obsolete jobs (Gimpelson & Kapeliushnikov, 2013). Altogether, it is possible that Russian workers were less likely to be permanently excluded from the labor market, yet they were at greater risk of under-employment.

The employment-protection legislation – which was inherited from the Soviet system with marginal adjustments – remained relatively strict in formal terms. Nonetheless, empirical research has shown poor enforcement of labor regulations (Gimpelson et al., 2010). Workers and trade unions possessed weak collective bargaining power. As result, the Russian labor market became very volatile, with high rates of labor turnover and high hiring and separation rates (Kapeliushnikov et al., 2011). All this suggests rather low workers’ protection and low firing costs.

The wage system is flexible and quite non-transparent. A specific feature of the Russian wage system is the so-called “variable” (not fixed in labor contract) part of wages that comprises about 40% of the total wage bill (Gimpelson & Kapeliushnikov, 2013). This flexible part of wages is often even non-official. The flexible wage also correlates with firm performance and overall economic conditions: During economic downturns, this part of wages shrank, even in highly regulated public sectors such as healthcare and education. Minimum wages were among the lowest in the OECD countries (OECD, 2011a) and had no indexation rules and no clear legal framework.²²

3.6 Utilitarian principles of the Soviet social policy

In the logic of the Esping-Andersen’s (1990) terminology, there is no place for the Soviet model of the welfare system due to a lack of market mechanisms. On the other hand, Boyko (2003) points out that the Soviet system resembled the social-democratic regime because it included universality and corporatism, features characteristic of countries of this welfare type (full-employment principle, extensive and universal social insurance, advanced social system protection via enterprises). In the following, I review the literature on socialist welfare system and discuss its main features.

The main form of social protection in the Soviet Union can be characterized as universalistic and employment-related (Standing, 1996). Accordingly, the state guaranteed social security via access to basic services, and there was a redistributive system assuring a low level of earning differentials. The social security system was based on three main principles. First, the underlying principle of full employment with generally full-time wage employment of men and women became a norm, and this was preserved by treating unemployment as a “parasitism.” Eligibility for social protection was also guaranteed only by being in (full-time) employment. Second, subsidized wholesale consumer prices allowed for keeping the costs of living at a lower level. Third, access to social goods and services was determined by the employer. This access was further dependent on the employee’s position and tenure in the enterprise. However, the allocation of social goods and benefits, access to housing, holiday homes, and healthcare was often less based on needs than on the hierarchical position of the

²² Between 1992 and 2010, the minimum wage varied between 5 and 25% of average wages (Gimpelson & Kapeliushnikov, 2013).

beneficiaries (elites such as party members, union leaders, managers, etc. were privileged in queues).

Another important feature was concerned with stratified and segmented labor force integration with many socio-economic groups occupying positions at a lower level and paid below average (women, workers with physical or mental disabilities, ethnic minorities and migrants). Low pensions and a lack of savings (due to low life wages) pushed individuals to stay in employment even after official retirement (Standing, 1996).

Despite the problems detailed above, the Soviet system can be summarized as a strong and stable system with a high degree of social protection (Myant & Drahokoupil, 2011; Standing, 1999). Furthermore, state socialism was characterized by lower levels of inequality and higher levels of economic and social security compared with many capitalist economies (Myant & Drahokoupil, 2011).

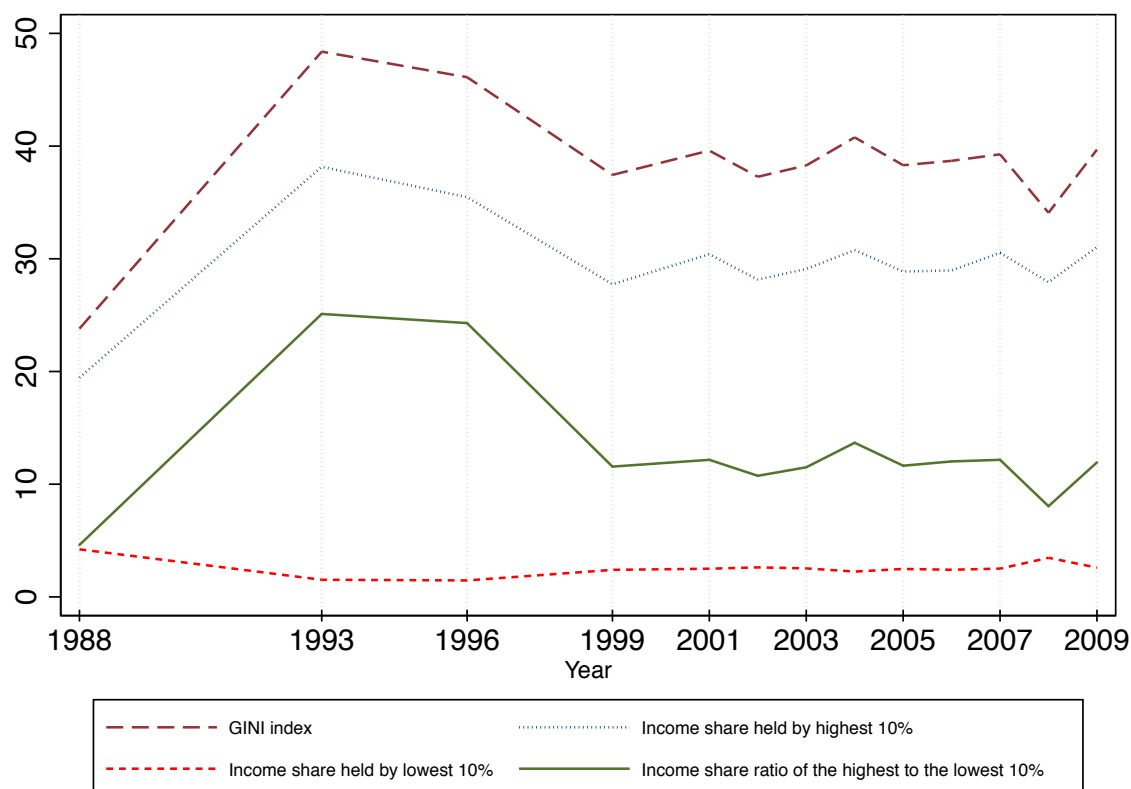
3.7 Growing inequality and developments towards the “liberal welfare regime” after 1991

The shock therapy of liberalization reforms strongly shaped the social sphere and induced growing poverty and inequality in Russia. Figure 3–2 illustrates that various measures of income inequality grew immensely. For instance, the GINI inequality index rose from 23.8 in 1988 to 48.4 in 1993 (to 38.3 in 2005). The ratio of the highest to the lowest decile (based on income or consumption) grew from 4.6 in 1988 to 25.1 in 1993 (to 11.6 in 2005) during the same period. Such a jump in income inequality is mainly due to the income gap between the top-earners and all other incomes. While the highest decile held 19.5% of the total income in 1988, this almost doubled in 1993, when the highest decile earned 38.2% of the total income (28.9% in 2005). In turn, the lowest decile held about 4.2% of total income, and this fell to 1.5% in 1993 (and to 2.5% in 2005).

Several studies have attempted to classify the welfare regime in post-Soviet Russia using different analytic techniques (Davidova & Manning, 2009; Fenger, 2007; Myant & Drahokoupil, 2011). Despite different cluster compositions, these researchers characterized Russia as a country with low social protection, low spending on employment policies, a low level of well-being, high poverty rates, wide income distribution and high income inequality. In general, the reforms in the economic sphere were initially oriented towards the liberal model of the welfare states (Davidova & Manning, 2009; Hanson & Teague, 2007;

Kapeliushnikov et al., 2011; Knell & Srholec, 2007). In this model, social sphere is of lower importance because achieving its goals contradicts the goals of economic efficiency and development. Accordingly, the Russian welfare state is characterized by the provision of only minimal standards and minimal support for disadvantaged groups, as can be seen from the following review of social policies.

Figure 3–2: Measures of income inequality in Russia



Note: The Poverty and Inequality database of the World Bank, accessed on 19.01.2015; own calculations.

In the middle of the 1990s and on the eve of the presidential elections, Russia proclaimed an orientation towards a “social state,” which, however, was not possible to reach in the following decades. There were various social reforms between 1996 and 2009 aimed at key social programs, such as health, education, housing, agriculture and demography (see the review of the social reform by Davidova & Manning, 2009). However, the character of these reforms was instead oriented towards an increase in expenditures, and the social institutions were not modernized, resulting in a lower efficiency of social programs (T. Maleva et al., 2010).

Public social expenditures in contemporary Russia are among the lowest compared with the other OECD countries. Russia spends about 9% of its GDP (stable since 2002) on social protection, whereas this comes to an average of about 12% among other post-socialist countries and an average of 27% within the European Union (T. Maleva et al., 2010). The social protection system is mostly transfer-based and not efficient enough to reduce the poverty risks of the working population (OECD, 2011a).

After the introduction of liberalization reforms, expenditures on labor market programs in Russia were relatively high and varied between 0.2-0.3% of the GDP between 1991 and 1999 (they peaked in 1995, at which point they made up about 0.4% of the GDP). In the aftermath of the reforms in the social sphere in 2001, labor market expenditures dropped by 50% and became largely oriented towards passive labor market programs (financial transfers). In 2009, the new tax reform was introduced, which allowed for tripling the budget on labor market policies (which amounted to 0.29% of the GDP). Nevertheless, Russian labor market expenditures are comparably low and constitute only one-fifth of the OECD average (OECD, 2011a). Moreover, active labor market programs have a very limited budget, and the effectiveness of these programs varies significantly across Russian regions (Akhmedov, Denisova, & Kartseva, 2003). The personal assistance system for jobseekers is poor and inefficient. Moreover, the system lacks access to good jobs, probably due to firms' low interest in collaboration with employment services (OECD, 2011a). Such system incompetence may explain why Russian workers fear unemployment much more strongly compared with the workers in other OECD countries, and this fear does not depend on the actual economy swing (Gimpelson & Oshchepkov, 2012). Furthermore, high administrative costs discourage jobseekers from registering as unemployed. Consequently, the level of ILO-based unemployment (8.5% in 2009) is three times higher than that of registered unemployment (2.8% in 2009) (OECD, 2011a).

Since 2001, social security contributions have been centralized and replaced the previous system, which was poorly legislated, decentralized, and characterized by inefficient redistribution (OECD, 2011a). Even with these changes, the redistributive power of the tax system remained limited and inefficient, particularly due to the system of privileges (an inherited Soviet relict, e.g., housing and utility subsidies). These privileges can be awarded not only to persons with physical and mental disabilities, but also to persons with special service records or occupational benefits. As a result, social inequality between various social groups might persist or even grow since disadvantaged individuals access privileges along

with advantaged ones. Despite the 2005 “monetization reform” aimed at cashing-out these privileges, the system remained less efficient and not always transparent (Zubarevich et al., 2007).

The statutory retirement age is low: 55 for women and 60 for men (versus a life expectancy of 74 for women and 62 for men). Public pensions are insufficient such that Russian pensioners have to remain in the labor market (Kolev & Pascal, 2002) in order to maintain acceptable living standards. Notably, pension benefits are not associated with the current employment status and income. Consequently, from the inequality point of view, pension policy is less efficient and increases income inequality between working and non-working pensioners (Gurvich & Sonina, 2012).

3.8 The inheritance of the Soviet “gender order” in contemporary Russia

Another crucial aspect of social policy – neglected by the welfare regimes of Esping-Andersen (1990) – is concerned with the role of the state and the predominant gender norms regarding the (re-)production of gender-stereotyped behavior (Esping-Andersen, 1990; Pascall & Manning, 2000). With the growing labor force participation of women, family and childcare policies as well as gender-equalizing welfare policies are becoming an essential tool in mediating the relationship between the labor market and family. This is particularly relevant for the Soviet case due to its historically high female labor force participation rates. In turn, gender norms shape employers’ recruitment decisions and (female) employees’ incentives to apply for jobs at the top of occupational pyramid (Mandel & Semyonov, 2006).

With regard to the gender question, the role of women in Soviet Russia has borne witness to many transformations. In the early Soviet period (after the First World War and the Civil War), when the Soviet state was oriented towards labor mobilization and industrialization, women were seen as “productive units” (Teplova, 2007). Women’s employment was supported through a generous state provision of childcare and related services to reduce their domestic responsibilities. This negatively affected fertility rates, which, in turn, led to further policy changes and the introduction of generous maternity allowance. However, the mass urbanization in the 1930s resulted in shortages in various social goods and services as well as cuts in generous childcare facilities. Hence, beyond being a productive unit, women were expected to be “loving wives and mothers” (Teplova, 2007, p. 288). The developments of this

period affected the emergence of the dual ideology regarding gender order in society: the formal ideology of equality on the one hand, and the patriarchal ideology in the real life on the other hand (Ashwin, 2002; Katz, 2001; Khotkina, 1994).

After the Second World War, the reproductive role of women intensified and women's maternity and good-wife roles were seen as their primary obligation (Teplova, 2007). While women's productive role was still relevant, women were increasingly considered "second-class workers" (Ashwin, 2002, p. 23). State policies were aimed prominently at both the stimulation of fertility rates and high female labor force participation via maternal and child-paid leaves, childcare provisions, and family allowance,. Childcare coverage was very high and well-developed with about 60% of children aged between 1 and 6 years in nurseries and kindergartens (Matthews, 1986, p. 83). At the same time, employment was a main channel to access childcare and related services (Teplova & Wooley, 2005). Additionally, labor legislation guaranteed a high level of job security and various benefits and privileges for working mothers (Teplova, 2007).²³ Consequently, the Soviet regime was quite successful in achieving a high female labor force participation: In Russia, females' labor market participation amounted to 67% in 1960 and 87% in 1975 (McAuley, 1981, p. 37).²⁴

Although the state gave a strong impetus for women's equal labor market participation with men, there were no similar attempts to equalize domestic and parental responsibilities (Adler & Brayfield, 1996; Schwartz, 1979). In this context, there was an asymmetry in parental responsibilities between genders in ideological, legislative, and everyday life: Men were legally freed from almost all obligations towards women and children, while women had an unlimited liability for their children. Additionally, childcare leave was only available for mothers. Thus, women were fully responsible for their children's social and emotional sphere

²³ Women enjoyed 112 days of paid maternity leave and up to one year of unpaid leave with a guarantee of coming back to their working place and preserving a continuous employment record. Women were further protected from firing during pregnancy and before a child turned three years old. Comprehensive childcare facilities for pre-school and school-age children as well as extracurricular activities enabled full-time employment. The state also provided a maternity grant and a second lump sum payment when the child was being weaned (for more details, see Ashwin, 2002; McAuley, 1981, Chapter 9; Teplova, 2007).

²⁴ As a reference point, the female employment rate among OECD countries was only 58% in 1989 (OECD, 2015).

and considered the unequal distribution of parental duties to be the norm (cf. Chernova, 2007, pp. 145–147). Contrary to women, men had more limited and higher status roles in Soviet society: Men were expected to serve “as leaders, managers, soldiers, and workers,” and to fulfill a role “of fathers and providers” (Ashwin, 2002, p. 23). Hence, men’s status and position in society was determined through their occupational position at work and the main breadwinner role in the family. A combination of these traditional masculine functions reinforced and promoted the patriarchal order of Russian society (Katz, 2001), in which a man was seen as “a universal patriarch to which both men and women were subject” (Ashwin, 2002, pp. 23–24). This gender order survived the Communist regime into a modern times.

As has been discussed, the turmoil liberalization reforms in 1991 neglected the social sphere due to the tight financial constraints and priority of other spheres. The Soviet system of the enterprise-based social benefits was “transformed” into the post-Soviet labor market, thereby shifting the administration of many social entitlements to private employers. However, in the reality of the competitive labor market, private employers become profit-oriented and were accordingly forced to minimize their production costs. Social provision became one such cost area (Teplova, 2007). Simultaneously, fertility rates dropped and abortion rates increased, which induced a demographic crisis in the post-Soviet Russia (Hollander, 1997). Females employment dropped by 10% in 1992 (compared with 1975) and lay at 78%, with a further reduction of about 10% in the next decade (calculated from GOSKOMSTAT, 2001).²⁵

The “re-domestication” of women took place in both political and cultural spheres. Russian policy-makers and society favored the idea of freeing “over-emancipated” Russian women (Katz 2001: 2004) and called for returning women “home to [their] traditional duties and position in the family” (Racioppi & See, 1995, p. 824). This patriarchal view also became very popular as a rejection of and protest against Soviet-style gender equality (Katz, 2001). Attitudes towards traditional gender values were reinforced, with a growing appreciation of women devoting themselves to their families (Motiejunaite & Kravchenko, 2008). Women’s increased engagement in family life was welcomed and acknowledged as benefiting society

²⁵ In East Germany, for instance, female employment shrank by approximately 37% from 1989 to 1992 (Ferree, 1995, p. 12).

as a whole (Teplova, 2007, p. 300). Such a view was further maintained by the growing influence of the Orthodox Church (Degtiar, 2010).

To facilitate these policy aims – predominantly oriented towards female labor market exit – a number of changes concerned with maternity and childcare were launched. Paid employment-linked maternity leave was extended (to 170 days), state-supported maternity leave was introduced for women who faced lays-off during pregnancy and for full-time students. Likewise, mothers benefited from prolonged paid childcare leave (until the child reached 18 months) along with a “parental leave benefit”, as well as unpaid childcare leave (until the child reached 36 months) in post-Soviet Russia (Teplova, 2007). Since policy became more oriented towards in-home caregiving, social policy budgets were drastically cut, which also resulted in diminishing public childcare support (Hofäcker, Stoilova, & Riebling, 2011).

These policy changes led to women’s prolonged career interruptions and increased the conflict between unpaid (particularly childcare) and paid work. Russian women increasingly entered into “reproductive” or non-market work. Contrary to many other post-socialist countries, the number of housewives increased substantially in Russia (van der Lippe & Fodor, 1998). At the same time, low wages did not allow for relying only on one income (LaFont, 2001), which mostly explains moderate reductions in female labor market participation rates. Entitlement to different leaves was also extended to fathers, though Teplova (2007, p. 298) argues that these instead “reinforced a perception of women as [...] main care providers” due to the lack of policies designed to redistribute care responsibilities.

All these changes were likely to enhance the patriarchal gender order that dominated Russian society and to strengthen society’s perception (and also that of women themselves) of Russian women as being primarily responsible for domestic work and homemaking (O. Zdravomyslova, 2003). Conjointly, the gender role in Russia with regard to the childcare remained strongly directed towards women (OECD, 2011a). This was able to instigate employers’ growing discrimination practices against women (Liborakina, 2001; The World Bank, 2003), and against mothers and pregnant women, in particular (CEDAW, 1999; Sinyavskaya, Zaharov, & Kartseva, 2007). Self-selection of women into low-paid jobs in the public sectors was one of the consequences. What is more, reforms in the social sphere potentially affected the employment and occupational patterns of working mothers as well as of women in fertile ages more generally. Empirical research emphasizes that combining work

and family life became difficult to manage in Russia (Sinyavskaya et al., 2007; Teplova, 2007; Vovk, 2006). Moreover, in terms of poverty risk children belong to the most vulnerable groups (Denisova, 2007; Karabchuk & Pashinova, 2011; Spryskov, 2003). All in all, the available evidence increasingly reports a marginalization of women's labor market position in the post-Soviet Era (see Brainerd, 2000; Gerber & Mayorova, 2006; Linz, 1996; Ogloblin, 1999).

Chapter 4

Data and methods

4.1 General description

The empirical analysis in the thesis is based on the statistical analysis of the best available longitudinal survey data for Soviet and post-Soviet Russia. The core interest of this thesis is to describe the *trajectories of growth and development over the life course*, to analyze the *role of educational transitions* by and in adulthood, and to approximate the *analyses of pattern of casual relationships* over longer time spans. Therefore, the first data requirement for the research of educational trajectories over the life course are the availability of the panel and/or life-history data. Moreover, since the main focus of this thesis is the *comparative lens* between Soviet and post-Soviet Russia, the second data requirement regards a long-enough time horizon to cover both periods.

The foremost survey that fulfills all aforementioned requirements is the linked data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey for Russia (EES), which are exploited for the empirical analyses in this thesis.²⁶

The GGS Programme is a cross-national panel survey designed to study demographic and social developments and the determinants of these developments in European and some non-European countries (Vikat et al., 2007). The first wave of the Russian GGS was carried out in 2004 and was based on a nationally representative sample of the 11,261 respondents (7,038 women and 4,223 men; calculated from the first wave of GGS, version 4.2.) aged between 18 and 79 years, with each respondent representing one household. The sampling covers 32

²⁶ The GGS data were obtained from the Generations and Gender Programme Data Archive and were created by the Demoscope Independent Research Center (Moscow) (United Nations, 2005). The EES for Russia was conducted by the Max Planck Institute for Demographic Research (Rostock), the Independent Institute of Social Policy (Moscow), and the Demoscope Independent Research Center (Moscow) (Bühler et al., 2007).

For my analyses, I used the merged file of the GGS and EES data (file “GGS_Wave1_Russia_V.4.1mergedees-versionIISP”) received from Max-Planck Institute for Demographic Research. I thank to Sigrid Gellers-Barkmann for giving me access to the data.

regions in Russia. The response rate was around 15% in St. Petersburg and Moscow and around 57% in all other areas (IISP, 2014).

The EES was conducted in 2005 and represents a unique follow-up study of 18-to-54-year-old respondents who participated in the first wave of the Russian GGS (Bühler et al., 2007). The survey was carried out by the Max Plank Institute for Demographic Research in Rostock, Germany together with the Independent Institute for Social Policy in Moscow. The EES covers detailed biographical information on respondents' employment, education, fertility, and residential histories from age 17 until the time of the interview.²⁷ The respondents were chosen based on the multistage probability sample of dwelling units, with a random selection of eligible respondents within listed household members. The survey relied on a face-to-face interviewing approach and is claimed to be random at each step of the selection (Bühler & Konietzka, 2011). The response rate was around 85%, resulting in a the sub-sample of 6455 individuals (3995 women and 2460 men).²⁸

Regarding the GGS data, it should be noted that low response rates in Moscow and St. Petersburg is a general problem of Russia's surveys (Sinyavskaya, 2012).²⁹ Previous literature utilizing the same data acknowledges the problematic of low response rates in these two major cities (Billingsley, 2011; Bühler & Konietzka, 2011; Konietzka & Bühler, 2010). Despite this limitation, comparisons with Census data showed that the GGS sample mimics well the major characteristics of the Russian population and, thus, is representative for the whole population (Houle & Shkolnikov, 2005). To account for possible selection and attrition bias, I adopt the strategy of previous studies by controlling for residence in St. Petersburg and Moscow at the GGS interview date. Yet, I recognize that the empirical analyses may not

²⁷ For survey instruments, see Bühler et al. (2007).

²⁸ I checked official data for female-male proportions in the Russian populations. Between 1926 and 2012, the composition of the Russian population consisted of 47% men (45% in 2012) and 53% women (55% in 2012) (ROSSTAT, 2012, p. 180).

²⁹ For example, Mu (2006) explored sample attrition for the Russian Longitudinal Monitoring Survey (RLMS) and found out that the leavers (those who dropped out) are more likely to live in Moscow and St. Petersburg, as well as in other urban areas. It seems that the higher the urbanization grade is, the lower the level of cooperation of the households is. One explanation for this is a high criminality rate in Russia, and in urban regions in particular (Sinyavskaya, 2012).

be fully representative for the population in Moscow and St. Petersburg. For sensitivity checks, I additionally conduct all analyses excluding the GGS Moscow and St. Petersburg residents. No substantial conclusion did change.³⁰

Regarding the EES data, a comparison with the *1994 microcensus*, the *2002 population census* data, as well as data from *Federal service of state statistics* points to a rather relatively good representativeness of the EES sample for the Russian population even though the correspondence of the EES with the *1994 microcensus* regarding educational attainment seems to be less sufficient (Soroko & Konietzka, 2006).³¹ My own comparison of the EES data with the official data for female/male proportions in the Russian populations revealed that between 1926 and 2012, the composition of Russian population consisted of 47(45)% men and 53(55)% women (ROSSTAT, 2012, p. 80).

4.2 Data preparation and major coding strategy

The EES was designed to gather data for event-history analyses and contains monthly information on various biographies, including educational, employment and non-employment, childbirth and migration ones. Additionally, the survey captures main and additional (performed parallel to main) activities, such as education + parallel employment/parental leave, gainful employment + education/parallel gainful employment/parental leave, housework + education/parallel gainful employment/parental leave, and unemployment + education/parallel gainful employment. Education episodes cover information on whether studies were interrupted, the kind of education, and whether the education was part-time and qualified with a diploma. Within the employment biography, information on the occupation, the status in employment, the type of the forms of property, industry position, working hours, and working schedule is available. For the last three indicators, the information is gathered when the person took up and left each job. Non-employment activities include paternal leave, housework, unemployment, military (only for

³⁰ Results are available from the author upon request.

³¹ My empirical investigations might be slightly biased in favor of the higher-educated because I conduct examination on the basis of retrospective data. Empirical research has shown that the lower educated and those working in manual jobs or low services have higher risks of mortality (Bessudnov et al., 2011; Bessudnov, 2011).

men), and retirement. To recover the partnership biography, I used information from the GGS partnership module.

The data covers the period between 1965 and 2005 and allows for reconstructing the individual life courses with all episodes in and outside the labor market in the period of these 40 years. On the basis of educational, residence and family histories, I was further able to fill in information on education and training events, partnership states and number of children, and regional mobility events that occurred during labor market related episodes. For each episode, the month and year of the start and end date was available.³² Altogether 1,701,292 monthly episodes were generated. Each episode is described by the month and year of the beginning and the end of the episode.³³

4.2.1 The definition of the main analyses sample

For the purpose of this study, only individuals who have completed initial education were selected. Individuals are considered as having completed their initial education when they left formal education for at least 12 months. I decided in favor of 12 months to ensure that persons were actually available in the labor market and not in a “waiting line” to continue initial education, for example, due to early family roles or labor market participation in order to finance education (continuation). In order to visualize my approach and possible problems connected with inappropriate sample definition, Figure 4–1 explains how the point of leaving the educational system was specified.

In the presented example, all individuals were enrolled in education at the start of the observation period, i.e., in January of year they turned 17 years old. As mentioned, the point of leaving education is defined as being when the respondent left education for 12 months or more and entered another activity (respondents 1, 4, and 6). In the case that the respondent returned to education within 12 months (respondents 2 and 3), the point of leaving the educational system is defined when he or she left the educational system for at least 12 months again. However, there are also individuals who never left education (respondent 5),

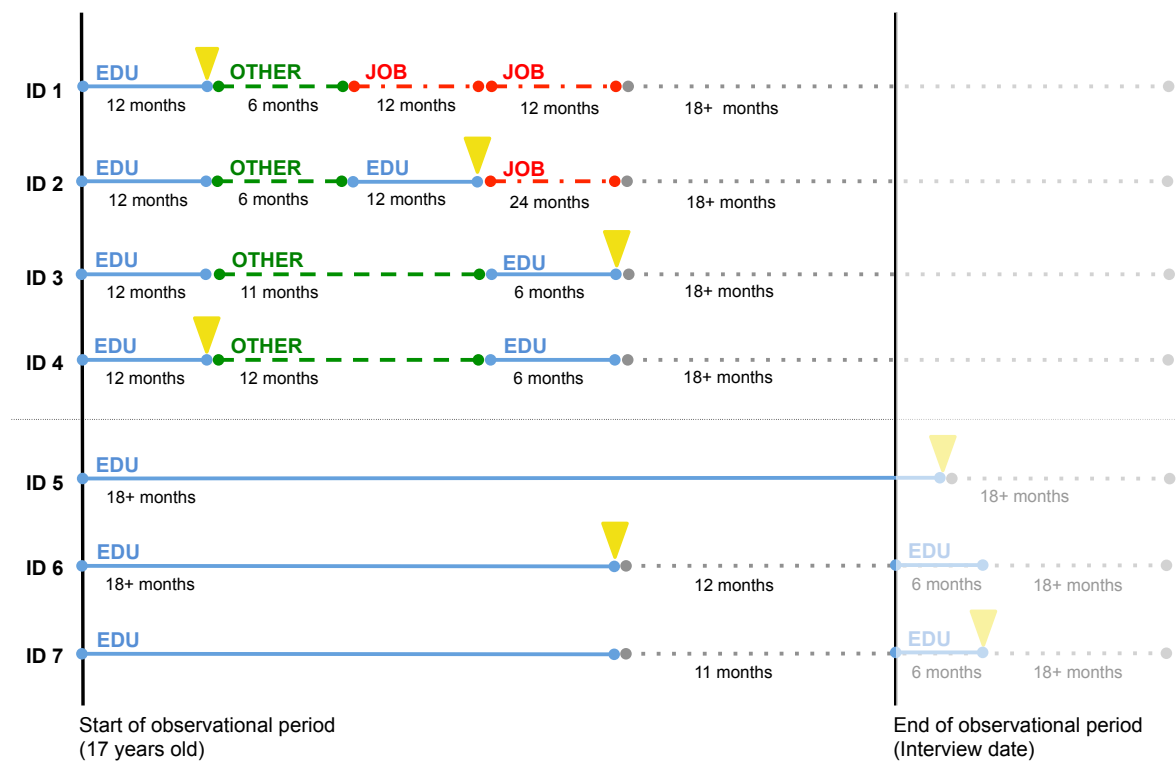
³² Parts of the analyses on EES data used a syntax for generating the episode data written by Kreyenfeld and Konietzka (2012).

³³ For more efficient data use, I join similar episodes so that relevant information is not lost. For this purpose, I use “stjoin” Stata syntax.

or the point of leaving education cannot be observed (respondent 7). In the former case, individuals do not represent any analytical interest for my study as they are not yet available in the labor market. In the latter case, an individual enters the educational system again within next 12 months; however, we are not able to observe this due to the right-censoring at the interview date. Consequently, to reduce potential selectivity bias, individual histories in which the gap between education and the date of interview was less than 12 months were censored on the right (excluded from the analyses).

Figure 4–1: Definition of the point of leaving the educational system in the sample

▼ Attainment of initial education: hypothetical examples



Note: Own illustration.

Considering these criteria, the subsample of 6,046 individuals (3,762 women and 2,284 men) was selected. Further restrictions to the sample are different in each empirical chapter and are thus presented in detail in the research design section of the respective chapter.

Importantly, due to the design of the EES, there are 660 respondents for whom the first spell is not educational, i.e., they were not in education in January of the year when they turned 17. The consequence is that the actual gap between the previous and the next educational spell cannot be precisely identified. A comparison with the GGS data shows that those individuals

had mainly incomplete secondary education. In contrast to Bühler and Konietzka (2011), I do not exclude these respondents since their exclusion might lead to biased results towards the higher-educated. Instead, I assume that these respondents have left the educational system by the start of the observational period if they do not return to formal schooling within next 12 months (as defined above). For these individuals, I set the educational level as incomplete secondary education by default. This may increase if they attain the next (higher) level. In the multivariate analyses, I add the control “approximate education” for such cases. More detailed information on the coding strategy of educational attainment can be found in Appendix B.

4.2.2 The construction of variables used in the empirical analyses

Table 4–1 provides an overview of variables used in my empirical chapters and their measurement.

Table 4–1: Information about the coding of variables

<i>Adult education enrolment (completion)</i>	
Based on the reported type of education (Card 4 of the EES questionnaire) the individuals received. Only education after attaining initial education level is considered.	
= 1 No adult education	No enrolment (completion) into (of) adult education
= 2 Upgrading	Enrolment (completion) into (of) education that is of higher level than previously attained
= 3 Sidestepping	Enrolment (completion) into (of) education that is at the same level of below compared with previously attained
<i>Age of labor market entry</i>	
Calculated using year when labor market entry has occurred (Y_LME) deducted reported year of birth (Y_B).	
= 1 below 20	$(Y_LME - Y_B) < 20$, (min. 17)
= 2 20-25	$20 \geq (Y_LME - Y_B) \leq 25$
= 4 over 25	$(Y_LME - Y_B) \geq 25$, (max. 36)
<i>Approximated education</i>	
= 0 No	Was in education in the January of the year when turned 17
= 1 Yes	Was not in education in the January of the year when turned 17; As a result, educational attainment in the January of the year when turned 17 is assigned to be as incomplete secondary, but is changed if the respondent attains next (higher) level
<i>Authoritative position</i>	
Based on the question on position in a job (Card 8 of the EES questionnaire)	
= 0 No	Unqualified worker; qualified worker; highly-qualified worker; employee who performs relatively simple tasks; employee who performs more complex tasks, implying some autonomy; self-employed, i.e., a person who has a business of his or her own in industry, trade, or the service sector, and <u>does not hire</u> his/her own employees; self-employed lawyer, doctor, notary, who has a private practice and <u>does not hire</u> his/her own employees; farmer; agricultural employee
= 1 Yes	Team leader; foreman; employee who performs autonomously an important task or has a few subordinates; leader with significant managerial authority with the right to take important decisions; self-employed, i.e., a person who has a business of his or her own in industry, trade, or the service sector, and <u>hires</u> his/her own employees; self-employed lawyer, doctor, notary, who has a private practice and <u>hires</u> his/her own employees;
<i>Branch of economy</i>	
Based on the question on industry the person worked in (Card 7 of the EES questionnaire). Coded according to the Russian Classification of Economic Activities (Russian acronym: Obshherossiiskij klassifikator vidov jekonomicheskoy dejatel'nosti, OKVED)	
= 1 Agriculture	Agriculture, hunting and forestry, fishery and fish breeding
= 2 Mining	Mining
= 3 Manufacturing	Manufacturing
= 4 Power industry	Production and distribution of electric energy, gas, water
= 5 Construction	Construction
= 6 Trade and consumer services	Wholesale and retail trade, repair services, hotel business, and catering
= 7 Transport and communication	Transport, mailing, communication, and telecommunication services
= 8 Finance services	Banking, insurance, marketing, and other financial activities; real estate, legal, leasing services, information technologies, etc.
= 9 State services	Federal state administration; regional state administration; municipal state administration; national defense, ministry for emergency, police, and fire departments; compulsory social provision
= 10 Health	Health and social protection, social assistance
= 11 Education	Education, science/academy
= 12 Other personal, social, and communal services	Culture and art; other communal and personal services
= 13 Other or miss	Other; non-reported

Table 4–1: Continued

<i>Cumulative experience of unemployment</i>	
= Months in unemployment	Months of unemployment (cumulated) within the last five years at the start of the current spell, after leaving education. Any experience of unemployment is considered.
<i>Educational level^b</i>	
Based on type of education (Card 4 of the EES questionnaire) the individuals received.	
= 1 Incomplete secondary	Highest attained education is unfinished secondary; assigned to every person for whom higher attainment level could not be identified
= 2 Lower vocational	Highest attained education is unfinished or finished secondary and vocational education
= 3 Secondary completed	Highest attained education is finished secondary
= 4 Secondary professional	Highest attained education is secondary professional based on incomplete or complete secondary
= 5 Higher	Highest attained education is higher or post-graduate
<i>Employment status</i>	
Based on the question on main activity (-ies) the respondent was engaged in during the current spell (Card 3 of the EES questionnaire).	
= 1 Employed	If was working for payment or received income from his/her activity and did not get a pension; was working without payment for a family enterprise or farm and did not get a pension; was a working pensioner.
= 2 Unemployed	If was not working and was looking for a job or was officially registered unemployed, and did not have parallel employment
= 3 Inactive	If was on maternal leave/parental leave; or a housewife/looked after the household; or in the military or alternative civilian service for a fixed period; a pensioner and did not work; or studied; or any other status when respondent did not have a parallel employment or was unemployed.
<i>Entered the first job</i>	
First job is defined as any job after leaving initial education.	
= 0 No	If did not enter the first job
= 1 Yes	If entered the first job
<i>Experience of adult education</i>	
= 0 No	Have never been enrolled into adult education at the start of the current spell
= 1 Yes	At least one episode of enrollment in adult education at the start of the current spell
<i>Experience of interruption</i>	
= 1 No	Zero episodes of being not in the labor force and/or unemployed before start of current spell
= 2 Not in the labor force	At least one episode of being not in the labor force before start of the current spell
= 3 Unemployed	At least one episode of being unemployed before start of the current spell
<i>Female</i>	
= 0 No	Male
= 1 Yes	Female
<i>GGs residence area in Moscow or St. Petersburg</i>	
Based on the GGS variable on region or administrative unit of residence.	
= 0 No	Residence in other areas than Moscow or St. Petersburg during the GGS interview (in 2004)
= 1 Yes	Residence in Moscow or St. Petersburg during the GGS interview (in 2004)
<i>Married</i>	
Measured using GGS dates of co-habitation, marriage, separation, divorce and widowhood and (start and end) date of the current spell. The method of episode-splitting was implemented (Blossfeld, Golsch and Rower 2007:137ff). Episodes were split into sub-episodes when partnership status have changed.	
= 0 No	Not married (never married, live together, divorced, separated or widowed) at the start of the current spell
= 1 Yes	Married at the start of the current spell

Table 4–1: Continued

<i>Occupational class</i>	
Based on the question on occupation in a job (Card 5 of the EES questionnaire); military personnel of the Russian army is coded to missing category	
= 1 Manager	Senior manager in state administration, in a public or political organizations, and trade-unions; top manager
= 2 Professional	Professional with higher education in technical and medical fields, the natural sciences and humanities
= 3 Semi-professional	Professional with special technical education; professional with special education in medicine, teaching, the natural sciences; professional with special education in finance, trade, commerce; state official; professional with special education in other areas
= 4 Services	Employee in an office, waiting rooms, a warehouse, a post office; worker of state and non-state defense bodies; worker in the service sector and trade
= 5 Skilled	Qualified worker in timber, the fishing industries, and agriculture; qualified manual worker and worker using special tools; qualified worker who uses complex mechanical mechanisms and machinery
= 6 Unskilled	Unqualified worker in different industries of the national economy
<i>Presence of children</i>	
Measured using birth date of a child and (start and end) date of the current spell. The method of episode-splitting was implemented. Episodes were split into sub-episodes when each child was 0 and 216 months old.	
= 0 No children	No child at the start of the actual spell or (all) children are aged 216 months and more
= 1 Children aged 18 years old and below	At least one child is aged between 0-216 months at the start of the current spell
<i>Post-Soviet labor market entry</i>	
Based on the period when labor market entry has occurred. For the empirical analyses in Chapter 5, labor market entry is defined as entry into first significant job (6 months or more). For the empirical analyses in Chapter 7, labor market entry is defined as entry into any first job. Only jobs after leaving initial education are considered.	
= 0 No	Job episode starts between 01.01.1965 and 31.12.1990
= 1 Yes	Job episode starts between 01.01.1991 and 31.12.2005
<i>Post-Soviet period</i>	
= 0 No	Spell ends between 01.01.1965 and 31.12.1990
= 1 Yes	Spell ends between 01.01.1991 and 31.12.2005
<i>Previous labor force experience</i>	
= Months in employment	Months of employment (cumulated) at the start of the current spell. Only employment episodes after leaving initial education and labor market entry are considered.
<i>Previous number of jobs</i>	
= N of jobs	Number of (any) jobs (cumulated) at the start of the current spell. Only jobs after leaving initial education are considered.
<i>Previous number of non-employment episodes</i>	
= N of non-employment episodes	Number of not in the labor force or unemployment episodes (cumulated) at the start of the current spell. Only non-employment episodes after leaving initial education and labor market entry are considered.
<i>Private sector</i>	
Based on (1) the question on property type of an enterprise or organization the person worked in (Card 4 of the EES questionnaire), and (2) the question on type of employee	
= 0 No	Mixed property enterprise; state or municipal enterprise; non-for-profit, public organization
= 1 Yes	Newly established private enterprise; former state, privatized enterprise; international organization, regional office of a foreign company; worked for a private person; self-employed; worked for payment at a family enterprise; worked without for payment at a family enterprise

Table 4–1: Continued

<i>Rural area</i>	
Based on the question on the type of the settlement the respondent lived in (moved into) during actual spell	
= 0 No	Residence in a regional, territorial, or republican center; another town/city
= 1 Yes	Residence in an urban-type village; a village
<i>Sector of economy</i>	
Based on variable for branch of economy	
= 1 Primary	Agriculture; mining
= 2 Secondary	Manufacturing; power industry; construction
= 3 Tertiary	Trade and consumer services; transport and communication; finance services; state services; health; education; other personal, social and communal services
= 4 Other or miss	Other; non-reported
<i>Self-employed, family worker or farmer</i>	
Based on (1) the question on property type of an enterprise or organization the person worked in (Card 4 of the EES questionnaire), and (2) the question on type of employee	
= 0 No	Working and is not self-employed, family worker or farmer
= 1 Yes	Self-employed; worked for payment at a family enterprise; worked without for payment at a family enterprise; self-employed, i.e., a person who has a business of his or her own in industry, trade, or the service sector, and hires his/her own employees; self-employed, i.e., a person who has a business of his or her own in industry, trade, or the service sector, and does not hire his/her own employees; self-employed lawyer, doctor, notary, who has a private practice and does not hire his/her own employees; self-employed lawyer, doctor, notary, who has a private practice and hires his/her own employees; farmer; agricultural employee
<i>Socio-economic origin</i>	
Based on the GGS constructed variable for father's and mother's highest educational attainment, coded as ISCED level. The highest educational attainment level among parents was calculated. The original labels for variable are provided in parentheses.	
= 1 High	Secondary professional and higher (first stage of tertiary; second stage of tertiary)
= 2 Medium	Secondary completed and post-secondary non-tertiary (upper secondary level; post-secondary non-tertiary)
= 3 Low	Lower vocational and incomplete secondary (pre-primary education; primary level; lower secondary level)

Note: ^a For EES survey instruments, see Bühler et al. (2007). GGS survey instruments are available at <http://www.ggp-i.org/data/questionnaires.html>. ^b For more details on educational level variable, Appendix B

4.3 Method and software

In my thesis, I employ different statistical method model specifications to examine my research questions, and they are thus described in the respective chapters.

For statistical computation and graphical analysis I employ Stata 14 (StataCorp, 2014).

Chapter 5

Horizontal and vertical gender inequalities at labor market entry and regime change³⁴

5.1 Introduction

Gender segregation in the labor market is a decisive feature of all modern societies (e.g., Abendroth, Maas, & van der Lippe, 2013; M. Buchmann & Charles, 1995; Charles & Grusky, 2004; Charles, 2005; Estévez-Abe, 2006; Meulders, Plasman, Rigo, & O’Dorchai, 2010; OECD, 2011b; Steinmetz, 2012) because it is often connected to a systematic disadvantaging of women (compared with men) in the workplace in terms of wages (Marini & Fan, 1997; Perales, 2013; Petersen & Morgan, 1995), occupational rewards such as fringe benefits (Gundert & Mayer, 2012; Perman & Stevens, 1989), access to authoritative job positions (Kraus & Yonay, 2000; Reskin & Ross, 1992; Smith, 2002; Yaish & Stier, 2009), and promotion possibilities (Bukodi & Dex, 2009; Glass, 1990).³⁵ Remarkably, these female disadvantages in occupational rewards still persist despite women’s striking gains in the educational arena (OECD, 2012). This suggests that vertical gender inequalities might be a result of the separation of the labor market into men’s and women’s jobs, occupations, industries and sectors. In the following, I refer to this separation as horizontal gender differences.

Whereas gender segregation in the labor market has been studied extensively in most Western countries (e.g., Abendroth et al., 2013; Charles, 2005; Gundert & Mayer, 2012;

³⁴ This chapter is a modified and extended version of Kosyakova, Y., Kurakin, D., and Blossfeld, H.-P. (2015). Horizontal and Vertical Gender Segregation in Russia – Changes upon Labour Market Entry Before and After the Collapse of the Soviet Regime. In: *European Sociological Review*, 31(5), 573-590. For permissions, see Appendix F.

³⁵ The inequality recognized in the context of this chapter reflects the way women and men behave differently in the labor market. This may be a result not only of systematic discrimination but also of their preferences. Nevertheless, I speak of female disadvantage simply to have a term with which to describe the direction this gender gap is taking.

Steinmetz, 2012), investigations of post-Communist societies are rare (however, see Gerber & Mayorova, 2006; Ogloblin, 2005a; Trapido, 2006). Even fewer studies have examined the dynamics of gender segregation across the collapse of Communist regimes. This research gap is particularly striking because these societies have transformed from centralized planned economies characterized by highly egalitarian configurations (in formal and ideological terms) into decentralized and market economies with privatized individual risks and decisions. Studying societies experiencing such a “regime change” provides a unique opportunity to understand how gender differences and inequalities respond to fundamental changes in their economic, social, and cultural settings (Wong, 2002, p. 222).

Despite gender-egalitarian Soviet ideology, women’s (full-time) labor force participation in paid work and equalized educational opportunities, horizontal differences, and vertical inequalities prevailed in Soviet Russia. The collapse of the Communist regime instigated an unprecedented change in Russia’s labor market structure. Job opportunities and wages declined for many vulnerable groups, particularly for women (Brainerd, 1998).³⁶ This transition even reinforced cultural gender-specific stereotypes, with women being increasingly considered a “secondary” labor force in the new Russian labor market (Ashwin, 2002; Posadskaya, 1993).

Existing studies on (Soviet) Russia as well as other empirical studies on Western societies usually consider all workers and compare individuals in very heterogeneous career and life-course biographies, and in different stages of their careers. Contrarily, I concentrate on a specific group of employees: labor market entrants. This group is particularly responsive to structural changes in economic, social, political, and cultural spheres due to its members’ relatively vulnerable labor market positions as “outsiders” and their short work experience (Gangl, 2002).³⁷ Hence, it is also the group that has been most likely to be affected by liberalization reforms in Russia since 1991. Because the first step into the labor market

³⁶ Though, see van der Lippe and Fodor (1998) for contra-evidence.

³⁷ A major reason is that – *ceteris paribus* – employers are more reluctant to higher labor market entrants (compared to more experienced workers) as they have to invest more in training to make them productive (Thurow, 1975). Nevertheless, higher initial investments into firm-specific training are profitable for employers under the condition of mutual long-term relationships. Moreover, hiring labor market entrants might still be appealing to employers, due to lower start-off rewards (such as wages or non-monetary benefits).

impacts substantially on the subsequent career (H.-P. Blossfeld, 1987; Bukodi & Dex, 2009; Scherer, 2005), studying patterns of gender segregation among labor market entrants may also shed some light on the future production and reproduction of gender inequalities over the later life course. Importantly, labor market entrants are less likely to be recruited via “internal job ladders” that create path-dependent career trajectories by amplifying initial (dis-)advantages over time (cf. DiPrete & Eirich, 2006). Likewise, gender differences in tenure and occupation-specific training – which affect subsequent career stages – have not yet emerged (Marini & Fan, 1997). Therefore, occupational outcomes at the career start are less dependent on these factors, and gender differences in job positioning cannot be attributed to path-dependent outcomes.

Drawing upon retrospective data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey for Russia (EES), I aim to contribute to the literature on gender inequalities in the labor market by studying how gender segregation upon labor market entry has changed through the transition from socialism to a liberalized market economy in Russia. I distinguish gender segregation in terms of both horizontal gender differences and vertical gender inequalities (Blackburn & Jarman, 2006). The horizontal dimension concerns the way in which men and women jointly distribute themselves over different sectors of economic activity (e.g., occupations, industrial sectors). The vertical dimension refers to inequalities between men and women with respect to “desirable attributes” of jobs, such as job rewards and further job opportunities (Bettio & Verashchagina, 2009, p. 30).

Because the data used provide no information on wages, I refer to the other important vertical outcome: authority positions. Authority in the workplace is a good proxy for higher occupational remuneration because such positions are usually better paid and characterized by more responsibility for and influence over other workers (Smith, 2002).³⁸ For the purpose of this study, I consider the job authority outcome to even be superior to wages for two reasons: (1) the very high compression of wages during the Communist regime and (2) the way authoritative positions “opened” access to different privileges (e.g., special medical care,

³⁸ According to Yanovitch (1977, p. 40), the distinction between those making decisions and commanding others and those “executing” these decisions was “a source of significant inequalities in earnings” under the Communist regime.

housing, transport, travels, etc.) and so-called “deficit goods” (Yanowitch, 1977).³⁹ One could argue that authoritative positions are generally less available to labor market entrants. However, this argument, in particular, reveals how job authority is a crucial outcome because earlier gender inequalities in access to power and decision-making positions might promote gender-inequalities in the later career (Kanter, 1977; see also Hultin & Szulkin, 2003). Hence, studying the gender gap in early access to authoritative positions will enhance our understanding of the emergence of gender inequalities in the Soviet and post-Soviet labor force in a broader sense.

In the next section, I discuss the main features of the gender employment structure in Russia during the period covered in this study, and I review the available empirical literature on gender segregation in the Russian labor market before and after the collapse of the Soviet Union. In doing so, an additional focus is set on the role of the educational system, family policies, and cultural aspects for the (re-)production of labor market related gender disparities. Afterwards, I discuss the theories on gender segregation and elaborate my hypotheses for Russian labor market entrants. It is important to mention that I do not test a specific theory, but rather use these theories as the ground for my argumentation. Following this, the data, methods, and variables are described before moving to the main results. Finally, the conclusion summarizes the main findings and their implication for social inequality with regard to gender during and after the regime change in Russia.

5.2 The historical context of gender segregation in Russia

5.2.1 The labor force participation of Soviet women and “gender equality”

The Soviet regime was characterized by a state-driven, centralized, planned economy. Soviet socialist culture emphasized the high intrinsic value of work – primarily in production industries – and propagandized its contribution to socialization, economic independence, social status, and personal satisfaction. Strict employment regulations prohibited non-

³⁹ Although communist party membership increased the chances of having an authoritative position, it was not a sole criterion (Rona-Tas & Guseva, 2001; Yanowitch, 1977, p. 34). For instance, such professions as “gang foreman” or “head of construction department” did not require party membership. Furthermore, not all party members had access to privileges, and among party members, access to privileges was stratified by different positions in the party.

working. Based on the comparatively low productivity of the Socialist regimes, female work was also highly demanded (Lapidus, 1993). Based on these factors, the Soviet social consciousness denied the idea that women could be not participating in the social production (Ajvazova, 1998). Female labor force participation in paid work was consequently very high in the Soviet times (between 66.7% in 1965 and 86.9% in 1975; McAuley, 1981, p. 37) and usually full-time (Ahlander, 2001).

This high women's labor market participation was a result of Soviet policies that "recognized the potential contribution of women to both production and reproduction" (Lapidus, 1993, p. 138). In order to encourage women's integration into the workforce, government policies guaranteed them high minimum wages, generous maternity leave, and the provision of daycare (Brainerd, 2000; Meshcherkina, 2002). Employment was virtually a main channel for accessing childcare and related services (Teplova & Wooley, 2005). However, this "generous public support" and the low Soviet wages seemed to not be enough to sustain a family with only one earner (Lapidus, 1976). Hence, women also worked in order to ensure sufficient household material well-being. Nevertheless, women still had the primary responsibility of domestic tasks, resulting in a higher burden of reconciling work and family duties at the price of their career prospects (Ogloblin, 1999, p. 604). Soviet studies indicate that although women and men spent roughly equal amounts of time in paid employment, women spent more than double the amount of time on housework compared with men (for a literature review, see Lapidus, 1993).

Soviet employment regulations were very strict and did not allow discrimination against women. However, while Soviet women officially enjoyed equal rights in terms of wages and employment, the literature reports that they earned only 60–65% of male wages (Katz, 1997; McAuley, 1981). It is worth mentioning that due to the Soviet ideology of the working class domination (Inkeles, 1950), manual workers in blue-collar occupations enjoyed higher average wages than employees in comparable position in white-collar occupations (Yanowitch, 1977, pp. 29–33). Accordingly, one reason for the earning differentials between men and women might be seen in women's different occupational distribution: Women were traditionally more likely to be employed in the low-priority sectors such as health and education as well as trade and semi-skilled professional occupations (textiles and banking

industries) (Ahlander, 2001; Lapidus, 1976, 1993).⁴⁰ Such industries as coal, lumber, electric power, and mineral extraction belonged to priority sectors (and were accordingly characterized by high average wages) and were strongly male-dominated, with less than 30% being female workers (Lapidus, 1993). For many jobs with extra remuneration for dangerous working conditions, lifting and carrying weight, and harmful work, employers were prohibited by law from hiring women (20% of all occupations) (Lapidus, 1993; Mezentsseva, 1994).⁴¹

What is more, the literature reveals that Soviet women had less access to head positions (McAuley, 1981; Yanowitch, 1977), even in occupations with higher proportions of women (Katz, 1997). For instance, although women increasingly occupied professional and “specialist” positions, they were still more prominent in subordinate positions and were underrepresented in supervisory jobs and jobs with executive power (McAuley, 1981, pp. 86–91). These patterns are also reflected in a male dominance in the political realm (Carnaghan & Bahry, 1990) and the de facto absence of women from the Soviet political elite (Lapidus, 1976, 1993).

Another important aspect in terms of the gendered occupational distribution refers to the role of the educational system. Enrolment rates in education, the number of study places, and the school-to-work transition were also state-administered in Soviet Russia (according to planning-economic goals). Job assignments from almost all educational institutions were mandatory, ensuring a tight link between the educational system and the labor market (see Section 3.1). Up until the collapse of the Soviet Union, women gradually attained more education and caught up with men (Gerber & Hout, 1995; McAuley, 1981). Nonetheless, women were concentrated in educational fields characterized by lower wage returns – mostly education, the social sciences, the humanities, medicine, law, and economics – whereas men were concentrated in the most remunerative fields such as skilled manual work and engineering (Gerber & Schaefer, 2004). However, since the industrial sector was the largest

⁴⁰ These occupations were prominently female-dominated, with about 80% of female workers in healthcare and over 70% in light industry (Ahlander, 2001). Moreover, the proportion of female workers in the food and textile sectors comprised over 80% and was over 90% in garment production.

⁴¹ Despite labor legislation restrictions, female employments in such jobs persisted: Employers could pay female workers lower wages as a penalty for violating the law (Lapidus, 1993).

and not working was forbidden, women also had to choose among traditionally “male” professions.⁴²

Notably, there were – based on both cultural stereotypes and informal instructions – some official and latent discriminatory practices against women and unofficial quotas for women with regard to enrollment in post-compulsory education. Some very prestigious educational institutions and professions were also virtually inaccessible to women (Voronina, 1998).

Considering these special features of the educational system in Soviet Russia, we may assume that gender segregation in educational choices was reproduced in the labor market (Gerber & Schaefer, 2004; Solga & Konietzka, 1999) and that both vertical and horizontal occupational segregation in Soviet Russia was often rooted in the first allocation to the job.

5.2.2 The evolution of gender segregation after the regime change

After the collapse of the Soviet Union, Russia was hit by a “transitional shock” characterized by increasing employment uncertainty and a considerable restructuring of the economy and the labor market. The educational system was decentralized, mandatory job assignment was abandoned, and formerly centralized hiring (and wage) decisions shifted to private companies. Growing returns to education resulted in the quickly expanding enrolment in tertiary education from the mid-1990s onwards (e.g., Lukiyanova, 2010). However, professional education was only loosely linked to employers’ requirements in the new market economy (Gerber, 2003). These developments triggered a so-called “credential inflation” (Collins, 1979) resulting in a decline in the signaling power of educational certificates.

At the same time, women were surpassing men in terms of educational attainment through a strong shift towards tertiary education (e.g., GOSKOMSTAT, 2001). Nonetheless, the empirical literature has found that women were strongly penalized in terms of the growing gender wage inequality (Brainerd, 2000; Gerber & Mayorova, 2006). Although it remained rather high, female labor force participation declined from 77.5% in 1992 to 68.8% in 2005

⁴² Notorious examples include female tie layers, technical house-painters, and other physically strenuous professions that were ultimately female in the USSR.

(GOSKOMSTAT, 2001).⁴³ Occupational allocation was very gender-typical, with women concentrating on low-paying jobs (Klimova, 2012). For instance, Russian employers reported higher preferences for male workers in occupations such as insurance or advertising agent, economist, programmer, sales, and engineering, whereas women were preferred in accountant and secretarial positions (Roshchin & Zubarevich, 2005). Research further indicates that Russian firms are characterized by the so-called “glass-ceiling” phenomenon (Wirth, 2009), or in other words, that female applicants were hired to jobs with fewer promotion possibilities (Linz, 1996).

Notably, empirical literature points to the changed value of some professions after 1991 and the so-called “masculinization” of those professions/occupations that became more remunerative. There is compelling evidence that traditionally female-dominated sectors, such as finance, insurance, and lending institutions – which were less prestigious in the Soviet era and became of high value (with growing wages) in the post-Soviet era – turned into male-dominated sectors. In addition, in “priority sectors of the economy,” such as energy, metal, and transportation, men could retain and even strengthen their wage and occupational advantages and virtually “squeezed” women out of those sectors (CEDAW, 1999; Roshchin & Zubarevich, 2005).

Russian women were evidently less able to convert their educational advantages into occupational opportunities. To address this issue, I distinguish between two forms of occupational gender segregation: horizontal differences and vertical inequalities. My research agenda follows two major questions: (1) To what extent can we observe these two types of gender segregation upon labor market entry in Russia? (2) How did these two types of gender segregation change through the collapse of the Soviet Union?

⁴³ However, from a comparative perspective, the employment of Russian women was hit by the transition process to lesser extent compared with women in other post-Socialist societies (Flanagan, 1995; Monousova, 1997; van der Lippe & Fodor, 1998).

5.3 A theoretical framework on gender segregation upon labor market entry

Several sociological and economic theories conceptualize gender segregation in the labor market. I discuss three major categories, i.e., naturalistic, cultural, and institutional explanations and apply them to the Russian context.

5.3.1 Naturalistic explanations

Naturalistic arguments relate the male–female difference in positioning in the labor market to biological differences between men and women, such as maternity concerns and physical advantages, and these differences increase in the process of gender-specific *socialization*.⁴⁴ Traditional gender roles and prevailing expectations about gender in society lead to horizontal gender differences in the labor market because women are pushed towards specific jobs that are close to their family tasks, such as services, education, care, and nursing (H.-P. Blossfeld, 1987). In line with this and despite high female labor force integration and a broad range of opportunities for women that emerged during industrialization, the Soviet patterns of female employment resemble those found in Western countries. Women were overrepresented in trade, procurement, suppliers, public dinning, nursing, and teaching, whereas men were overrepresented in heavy industries (Lapidus, 1976). These gender-typical choices survived Communist times and have lasted up to contemporary Russia (Ogloblin, 2005b).

Human capital theory begins from the same premise, explaining vertical gender inequalities as an outcome of rational cost–benefits calculations. Women anticipate future family obligations and invest less in their human capital than men, resulting in lower occupational chances and future earnings (G. S. Becker, 1985). Similarly, *self-selection* and *skills-atrophy*⁴⁵ theories trace vertical inequalities back to women’s preferences for jobs that

⁴⁴ In psychology, socialization process involves interdependence of experience and biology. Accordingly, girls and boys would be socialized via different experiences to acquire gender-differentiated adult roles appropriate in the given cultural context (Grusec & Hastings, 2007).

⁴⁵ Atrophy refers to a loss in future earnings when skills are not used continuously (Polachek, 1981). Because women tend to interrupt their careers more often, they act rationally and choose occupations with lower atrophy

promise a better reconciliation of family and work (e.g., more flexible and shorter working hours).⁴⁶ These require less commitment and upgrading of human capital but are also less well-paid (Hakim, 2006; Polachek, 1981). Hence, even if women attain the same level of education as men, they are likely to invest in different types of education or in different educational fields that already offer lower occupational rewards in the first job (Gerber & Cheung, 2008). Importantly, these theories assume higher labor market absenteeism among women, but this can hardly be applied to Soviet Russia. These arguments are valid only if we consider the dual role of working mothers in Soviet Russia, which also survived the Communist regime. As result, Russian women are quick to invest in less remunerative types of education or educational fields (Gerber & Schaefer, 2004) and/or to choose less ambitious careers in order to balance work and family duties (Ogloblin, 1999).

In turn, the same arguments – that supposedly incline many women to gender-specific strategies – affect employers’ hiring decisions, resulting in discriminatory practices. Accordingly, *intentional discrimination* assumes that discrimination persists due to the prejudices of employers, workers, or customers against specific “social groups” (G. S. Becker, 1971). Consequently, employers pay higher wages to male workers or hire female workers with lower reservation wages (Steinmetz, 2012). Contrarily, *statistical discrimination* predicts that women’s exclusion from particular (highly paid) occupations is a result of employers’ expected higher costs due to women’s potentially higher absenteeism

rates to reduce these negative effects on life-course earnings. Although these jobs are characterized by lower wages, they “remunerate” women better.

⁴⁶ Even if the percentage of mothers is likely to be lower among labor market entrants, expectations about future family responsibilities and their potential combination with working life might affect (female) employees’ application decisions as early as in the first stages of the career (Barbulescu & Bidwell, 2012)

and turnover rates (Arrow, 1973).⁴⁷ Theories of *segmented* (also *internal/external*) *labor markets* argue that one's occupational position is more determined by the organizational structure of the labor market than by human capital (Meulders et al., 2010). The key element here is a firm's investments in occupation-specific training, which influences job mobility and promotions. Hence, applicants are chosen based on the probability of how long they will stay in the firm in order to cover training costs (H.-P. Blossfeld, 1987). Due to employer's higher uncertainty regarding long-term mutual relationships and the correspondingly higher investment risks of training female workers, employers would prefer to invest in – and thus also to hire – men.

Although discrimination against women was officially restricted under the Soviet regime, compelling empirical evidence points to its persistence. For instance, women were believed to be less creative, authoritative, and initiative compared with men. As a result, women choosing ambitious careers faced subtle challenges in terms of promotions and access to positions of responsibility (see Lapidus, 1993, p. 145; Linz, 1996, p. 161). In post-Soviet Russia, women reported regular discriminatory practices in access to private-sector jobs (Manning, 1998). By the end of 1990s, about one third of job vacancies were found to be non-gender-neutral, and these numbers have been growing since then (Roshchin & Zubarevich, 2005). A study of Russian firms has disclosed discriminatory practices of employers with regard to women's labor and social rights as well as the recruitment and dismissal of women (CEDAW, 1999; Liborakina, 2001). Additionally, several empirical studies have attributed a sizable part of unexplained variance to discrimination on the part of employers (Oshchepkov, 2008; Standing, 1994).

⁴⁷ Since job seekers' productivity is not fully evident in the labor market, employers face uncertainty when making hiring decisions. Facing such an information gap, employers not only rely on a candidate's current human capital but also on stereotyped information based on the productivity characteristics of the specific group the candidate belongs to (Tomaskovic-Devey & Skaggs, 1999). For instance, due to women's higher tendency to leave or interrupt their careers after childbirth, employers are inclined to evaluate female candidates (even though they might not have children yet) as a more risky investment compared with male candidates (Arrow, 1973; Phelps, 1972). Hence, statistical discrimination can lead to gender inequalities in labor market outcomes, even for equally educated and still childless men and women.

5.3.2 Cultural explanations

Cultural arguments also stress the role of socialization and gender-specific roles, but as an autonomous factor. They focus on the meaning-related foundations of gender differences, such as tradition, worldview, moral constraint, and the power of aesthetic conventions. Thus, from the perspective of *cultural sociology*, people's perceptions are strongly shaped by dominant cultural structures that are organized both implicitly and explicitly as dichotomous oppositions (Alexander and Smith, 2004). The male–female opposition is one of the major cultural dimensions structuring domestic and labor market roles in line with gender stereotypes. Thus, even though men and women are equally endowed for a particular educational or occupational track, worldview and traditions push both employers and employees to single out certain professions as typically masculine or feminine. Also according to the *gender identity* theory, individuals choose occupations based on their sense of self, whereby gender is an important aspect of the self-identity (Akerlof & Kranton, 2000). Self-identity leads women to choose typical “female jobs” and motivates men to reduce women's access to typical “male jobs” in order to preserve the masculine nature of these occupations. In line with these theories, the survey on gender and job suitability demonstrates a prevalence of gender-specific social attitudes and stereotypes in jobs in Russia (Ogloblin, 2005b, pp. 13–15). Soviet policies have even promoted official attitudes and stereotypes, e.g., by restricting women's employment in heavy and dangerous work considered to be “harmful for [the] female organism” and encouraged women to opt for occupations corresponding to their “biological and psychological peculiarities” and “moral-ethical temperament” (Lapidus, 1993, p. 145).

Like naturalistic arguments, cultural arguments inevitably link horizontal differences to vertical inequalities. Thus, the cultural principle of *male primacy* suggests that vertical inequalities are a result of the persistent societal presumption of male superiority and dominance as well as their better representativeness and higher status worthiness (Charles, 2005; Kanter, 1977; see also Bass, 2015; Lips, 2000). It is a matter of fact – alongside equality in the law and statutes – that the Russian society historically can be characterized by a pronounced patriarchal culture and the belief in male superiority (Ashwin, 2001, 2002;

LaFont, 2001; Posadskaya, 1993).⁴⁸ Although these attitudes were suppressed under the Communist regime, the policymakers not only failed to eliminate patriarchy but even “promoted” it in the private and public social life, for example, by supporting women’s equal participation in the labor market but not men’s equal participation in domestic work (LaFont, 2001; McAuley, 1981). Despite liberalization reforms, this patriarchal order of society has not changed, and women continue to be considered a secondary labor force (Ashwin, 2002; Posadskaya, 1993). Even more, during the *Perestroika* period, the so-called “patriarchal renaissance” was observed, with an enormous reduction of women’s representation in politics and their encouragement to return to their “natural” role as homemaker (Katz, 2001, p. 204), in addition to an overall drop in gender equality (Dilli et al., 2014). Consequently, despite a considerable advantage in educational attainment, the perception of Russian women (and their self-perceptions) as less suitable workers for positions marked by authority and responsibility (Ogloblin, 2005b) may reduce women’s opportunities in these jobs and contribute to their self-selection of lower-status jobs (Roshchin & Zubarevich, 2005) during the early stages of their careers.

Based on both naturalistic and cultural arguments I formulate following expectations:

H1: There are horizontal gender differences at labor market entry in Russia.

H2: There are vertical inequalities to the disadvantage of females at labor market entry in Russia.

5.3.3 Explanation concerned with regime change

To evaluate change in gender segregation after the collapse of the Soviet Union, it is important to consider institutional arguments. Four major factors of regime change could affect horizontal differences and vertical inequalities.

First, a *shift* from an industrial socialist economy to a *post-industrial service and knowledge economy* should stimulate a growth of horizontal gender differences because during the

⁴⁸ According to the Soviet gender order, women’s role was seen as “a worker-mother who had a duty to work, to produce future generations of workers, and to oversee the running of the household. [...] Men, meanwhile, had an at ones more limited and higher status role to play [...] as leaders, managers, soldiers, and workers [...]” (Ashwin, 2001, pp. 23–24).

Communist regime, females' preferences were effectively constrained by the state, and since the industrial sector was the largest, there were many more job opportunities. As women were forbidden not to work, they worked in many sectors, which can historically be seen as predominantly "male." After the collapse of the Soviet Union, two important processes were in place: the elimination of state restrictions and a service-sector expansion. Since the service sector increases job opportunities in "female" occupations (such as caring, teaching, etc.), this allows women to pursue their gender preferences, thereby facilitating a gender polarization of occupations (Charles, 2005). In other words, women would increasingly enter a growing "female" sector, whereas men would concentrate in a shrinking "male" sector.

Second, these trends should be reinforced by *abandoning the state-controlled enrolment rates and distribution in education* as well as by a *school-to-work transition* that provides room for gendered preferences and choices in education and work.⁴⁹ Third, in post-Soviet Russia, employers "gained" more opportunities to discriminate against (female) workers due to *reduced state control and labor union power* (Liborakina, 2001; Manning, 1998). Fourth, vertical gender inequalities might be bolstered by the introduction of *family policies encouraging mothers to withdraw from the labor market*. In the 1990s, maternity and childcare leaves were extended, and childcare facilities were reduced (Hofäcker et al., 2011; Teplova, 2007). In this sense, longer maternity leaves lead to higher labor market protection for mothers but also to a higher reluctance of employers to hire women for managerial and powerful positions (Mandel & Semyonov, 2006). In turn, generous state support in childcare is able to compensate for the practical effects of the basic difference between male and female workers concerning maternity.⁵⁰ Missing state support can reinforce "traditional" family formation patterns in which women tend to choose a "conservative" career strategy (which effectively means low-paid). Likewise, these new policies may have influenced employers' expectations regarding women's career ambitions and behavior (Polavieja, 2012; Teplova, 2007).

⁴⁹ The fact that women increasingly pursued their gender preferences is partly reflected in their labor market exit, for example, because they followed their preferences for family (see van der Lippe & Fodor, 1998; the number of housewives increased significantly in Russia).

⁵⁰ In other words, generous public support in childcare enables mother to maintain longer employment and may thus reduce employers' reluctance to higher women.

Finally, returning to cultural arguments, *new stereotypes* have emerged in Russia that reinforce the gender-specific occupational culture. Whereas we can observe a gradual reduction of traditional gender stereotypes in many stable economies, being subject to abrupt social change can reverse this process. In Russia, this turnabout came from the heart of the new economy: the emerging sphere of entrepreneurship. The explosive growth of entrepreneurship, accompanied by weakening state control, became an appropriate context for emerging brutal and violent standards of interactions in business life, which is more a male style of business interaction than a female one (Radaev, 1998; Volkov, 2002). These business ethics pushed women out of the most important processes that reshaped the whole economy in the transition period. The implication from these arguments coincide with the predictions of the institutional arguments, and the expectations are thus:

H3: Horizontal gender differences among labor market entrants will have grown since the collapse of the Soviet Union.

H4: Vertical gender inequalities to the disadvantage of female labor market entrants will have grown since the collapse of the Soviet Union

5.4 Research design

In my empirical investigation I use the linked data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey for Russia (EES). For more information on both surveys, see Chapter 4.1.

5.4.1 Risk sample

My analytical sample contains individuals who have completed initial education (for detailed description, see Section 4.1.2.1) and entered a first significant job. First significant job is defined one that has lasted for at least 6 months to avoid a misclassification of short-term labor as significant labor market entry. Accordingly, jobs that started while still in education are considered as first significant jobs only if they also lasted 6 months or more after leaving education.⁵¹

⁵¹The sensitivity analysis reveals that the selectivity concern is negligible, as more than 90% of individuals entered their first significant job. For those born from 1948 to 1965, we observe an entry into a first significant job for 99.91% of men and for 99.29% of women in the risk sample; for those born from 1966 to 1987 the rate

I further exclude job entries that occurred in the last 6 months before the EES interview to reduce a potential selectivity bias due to right censoring (3 women and 4 men). Finally, cases with missing values on job position were excluded list-wise (5 women and 4 men). After all restrictions, I ended up with 5,825 individuals (3,599 women and 2,226 men) representing 90% of the EES data.

5.4.2 Analytical strategy

5.4.2.1 Horizontal gender differences

I measure horizontal gender differences by *branch of economy*, i.e., „where” people are doing their work (H.-P. Blossfeld, Buchholz, et al., 2015).⁵² Thirteen branches of economy are used (1) agriculture; (2) mining; (3) manufacturing; (4) power industry; (5) construction; (6) trade and consumer services; (7) transport and communication; (8) finance services; (9) state services; (10) health; (11) education (including culture and art); (12) other communal, social, and personal services; (13) other or miss.

My analyses embrace two steps. First, I explore in which specific economic branches male and female labor market entrants tend to enter. I refer to descriptive analyses in this empirical part. Second, I assess the degree of overall gender segregation at labor market entry by calculating the widely used index of dissimilarity (Duncan & Duncan, 1955) and the IP index (Karmel & Maclachlan, 1988).

The Duncan index can be interpreted as the fraction of men or women who would have to change their occupation in order to arrive at an equal distribution on the labor market. This is calculated as follows:⁵³

is 95.81% for men and 91.50% for women. In the youngest cohort, the higher-educated have slightly higher risks of non-entry, probably due to the right censored cases. For more information on selectivity in a first job using the same data, see Bühler and Konietzka (2011).

⁵² I decided against using occupations to measure horizontal differences because the occupational classification in EES data represents a rather ordinal (i.e., vertical) ordering of occupations (similar to ISCO-08 1-digit). Even with a more fine-grained occupational classification, insufficient or missing case numbers in the segregation table could have distorted the segregation analyses.

⁵³ Notation for both formulas from Steinmetz (2012, p. 59).

$$D = \frac{1}{2} \sum_{j=1}^J \left| \frac{F_j}{F} - \frac{M_j}{M} \right|$$

with F for total number of females in employment, M for total number of males in employment, F_j for number of employed females in occupation j , M_j for number of employed males in occupation j , J for number of occupations. The Duncan index ranges from 0 (complete similarity) to 1 (complete dissimilarity). However, the Duncan index is very sensitive to the sample sizes and number of categories. The IP index is found to be more stable and more appropriate particularly in the comparative context. It is also more reliable for studying change over time. The IP index can be interpreted as the fraction of all labor market entrants who would have to change their occupation in order to arrive at an identical distribution of men and women. This is calculated as follows:

$$IP = \frac{1}{T} \sum_{j=1}^J \left| \frac{M}{T} F_j - \frac{F}{T} M_j \right|$$

with T for total number of employed persons and all other parameters defined as above. The IP index ranges from 0 (complete similarity) to 1 (complete dissimilarity).

5.4.2.2 Vertical gender inequalities

I examine vertical gender inequalities with a binary variable for having an *authoritative position* at the beginning of the first job. This comprises: being (1) team-leader, (2) foreman, (3) employee who performs autonomously an important task autonomously or has a few subordinates, (4) leader with significant managerial authority with the right to take important decisions, (5) free-lancer hiring own employees, or (6) an individuals having own business and hiring own employees.⁵⁴

⁵⁴ In additional analyses, I assessed vertical gender inequalities by defining to additional specifications of the dependent variable: (1) authoritative position at the beginning and/or end of the first job, (2) authoritative position at the beginning of the first job and/or managerial occupational position. Additionally, models with exclusion of self-employed individuals were examined. Results were robust overall and are available upon the request.

In the first step, I provide a descriptive account of gender gap in authority position among Russian labor market entrants. In the second step, I employ multivariate regression using non-linear function (logistic). The models are presented in a step-wise fashion starting with a baseline model assessing the total effect of gender on the probability of obtaining authoritative position in the first job.⁵⁵ Moreover, I add an interaction term between female and period in order to test my change hypotheses (i.e., *H3* and *H4*). I model two additional interactions – gender by education and gender by branch – to assess whether and how the gender gap varies by educational level or branch of economy.

For each model, I calculate average partial effect (APE) of females, which represents the average difference to men in predicted probabilities of entering authoritative positions, conditional upon the covariates in the model and their distribution in the sample. This effect can be interpreted as a gender gap on the probability scale. Contrary to logit coefficients or odds ratios, the APE is more suitable and less spurious for cross-model comparison (cf. Mood, 2009).

5.4.2.3 Independent variables

The main independent variable is gender, coded one for *female* and zero for male. To capture the transition process in Russia, I define a dummy for *post-Soviet labor market entry* (entry during 1991–2005 vs. 1965–1990).⁵⁶ I further account for differences in human capital by controlling for *educational level*. Educational level is measured at the labor market entry and includes five attainment levels: (1) incomplete secondary, (2) lower vocational, (3) secondary completed, (4) secondary professional, and (5) higher. Importantly, I include *branch of economy* to explore how vertical gender inequalities are attributable to horizontal differences, since the latter have been argued to “drive” vertical inequalities (see theoretical discussion).

Several potential confounding variables are included in my analyses. Following the theoretical explanations, maternity is one of the main factors influencing women’s gender-

⁵⁵ See Appendix C for a complete overview of model specifications (Table C–1, left part with 2 periods) and fit statistics (Table C–2, left part with 2 periods).

⁵⁶ Alternative specifications with four periods did not substantially improve the model fit (see Table C–1 and Table C–2 in Appendix C).

typical entry and increasing vertical inequalities to their disadvantage. Therefore, I control for *presence of children*. Additionally, women entering into the *private sector* might face more discrimination in this sector, leading me to include a control for this. Since demand for different types of occupations might vary by the type of area, I control for residence in a *rural area*. I include a dummy for being *self-employed, a family worker, or farmer* because this might be associated with gender. I further include an indicator for whether a respondent *lived in Moscow or St. Petersburg at the time of the GGS survey* to control for possible attrition bias due to the underrepresented population in these two cities (see section 4.1). Finally, I control for *approximate education* (see section 4.2.1) and missing values in the multivariate models. For more information on construction of variables, see Table 4–1 in Section 4.2.2.

5.5 Results

In the following, I first provide a brief overview of the changes in educational attainment levels of labor market entrants over last decades in Russia. Afterwards, I explore how horizontal gender differences in the first significant job changed over time. Finally, I analyze vertical inequalities between men and women in their first significant job and whether these patterns changed over the regime change in Russia.

5.5.1 Educational attainment upon labor market entry

How did the educational attainment levels of labor market entrants change after the collapse of the Soviet Union in Russia? Table 5–1 reports the distribution of educational qualifications upon the transition to the first significant job by gender and over historical periods of entry. One major trend is that those entering after the collapse are more educated than those entering before. Nonetheless, there are noteworthy gender differences.

In general, male entrants tend to obtain lower vocational and complete secondary education, although there is an increasing trend towards tertiary education (which includes secondary professional and higher education) for those entering after the collapse. Conversely, female entrants more often graduate from institutions of secondary professional education, and this trend together with the attainment of higher education has grown since the collapse. Almost one-half of female entrants have attained tertiary education.

Table 5–1: Educational attainment levels of labor market entrants by gender over period of labor market entry (column percentages)

	Soviet period			Post-Soviet period		
	Men	Women	All	Men	Women	All
Incomplete secondary	17.49	12.32	14.14	16.69	10.60	13.36
Lower vocational	30.44	21.54	24.67	31.37	18.50	24.33
Secondary completed	30.51	26.66	28.01	16.94	15.18	15.97
Secondary professional	13.44	28.78	23.38	19.82	33.58	27.35
Higher	8.12	10.69	9.79	15.18	22.14	18.99
Total (%)	100	100	100	100	100	100
Total (N)	1,429	2,637	4,066	797	962	1,759

Note: Linked GGS (2004) and EES (2005) data; own calculations.

Finally, comparing the educational level of female and male entrants, we find that women surpass men in terms of education during both periods.

5.5.2 Horizontal differences

Table 5–2 presents the frequencies of branches entered by men and women before and after the collapse of the Soviet Union. Consistent with official data,⁵⁷ we notice fewer entries for both men and women to the primary and secondary economy sectors and more entries in the tertiary sector after the collapse. These findings also suggest that the EES data is quite reliable for the retrospective analyses and reflects in appropriate way the societal and economical restructuring of Russian labor market over time.

A closer look reveals that during the Soviet period, about 52% of male entrants entered agriculture, mining, power industry, construction, and transport and communication compared with only 21% of female entrants. About 30% of men (and the same proportion of women) entered manufacturing. At the same time, about 37% of female and only 7% of male entrants went into trade and consumer services, health, and education.

This changed with the collapse of the Soviet Union. Now, both men and women enter the tertiary sector more often, with a stronger increase for female than for male entrants. These gendered patterns may be explained in terms of the political and societal developments in Russia since 1991. Simultaneous expansion of the tertiary sector, reduction of the primary

⁵⁷ For official data and the labor market structure before and after the collapse of the Soviet Union, see GOSKOMSTAT USSR (1988, p. 15) and GOSKOMSTAT (2001, p. 141).

and secondary sectors, and abandonment of the state-defined school-to-work transition “released” females’ preferences for occupations that are closer for their gender identity. This results in an even stronger female concentration in the tertiary sectors. In turn, men “stay” in more male sectors. Yet, fewer opportunities in the shrinking “male” sectors might have motivated some men to enter the expanding “female” sector of economy. Nonetheless, the collapse has evidently led to a stronger gender polarization upon labor market entry.

Table 5–2: Entry into branch of economy by gender and period of labor market entry
(column percentages)

	Soviet period			Post-Soviet period		
	Men	Women	All	Men	Women	All
<i>Primary sector</i>						
Agriculture	26.94	8.89	15.17	14.30	7.17	10.40
Mining	2.66	0.99	1.57	2.63	0.62	1.53
<i>Secondary sector</i>						
Manufacturing	29.60	30.15	29.96	23.21	13.41	17.85
Power industry	2.03	0.80	1.23	1.38	0.83	1.08
Construction	10.57	5.16	7.06	10.16	2.49	5.97
<i>Tertiary sector</i>						
Trade and consumer services	2.80	14.37	10.39	14.05	27.65	21.49
Transport and communication	9.94	5.54	7.08	8.66	3.12	5.63
Finance services	0.00	0.83	0.54	1.13	2.29	1.76
State services	7.49	4.02	5.24	12.17	4.68	8.07
Health	1.33	7.85	5.56	2.26	12.68	7.96
Education	2.87	14.75	10.58	2.76	18.92	11.60
Other communal, social, and personal services	2.38	4.32	3.64	4.39	4.37	4.38
Other or miss	1.40	2.43	2.07	2.89	1.77	2.27
Total (%)	100	100	100	100	100	100
Total (N)	1,429	2,637	4,066	797	962	1,759

Note: Linked GGS (2004) and EES (2005) data; own calculations.

Table 5–3 reflects the degree of segregation patterns in labor market entrants across Soviet and post-Soviet periods in Russia. The overall patterns of segregation indices suggest that male and female labor market entrants enter into different branches of economy.

According to the Duncan index, about 35% of women (or men) would need to change their occupation, in order to attain an equal distribution with men (women) during the Soviet period, and this number increased by 43% during the post-Soviet period. The IP index states that 16% of entrants who started their first job under the Soviet regime would have to change their occupations, in order to attain equal distribution of male and female entrants over occupations. This trend reached a benchmark of 22% after the collapse of the Soviet Union. Hence, both dissimilarity and IP indices suggest that entry is more gender-segregated by

branches of the economy since the collapse. Confidence intervals show that this change is statistically significant.

Table 5–3: Overall sex segregation across branch of economy by period of labor market entry

	Overall		Soviet period		Post-Soviet period	
	Coef.	CI ^a	Coef.	CI	Coef.	CI
Duncan index	0.35	(0.33, 0.37)	0.35	(0.33, 0.38)	0.43	(0.39, 0.48)
IP index	0.16	(0.15, 0.18)	0.16	(0.15, 0.17)	0.22	(0.19, 0.24)
Categories ^b	15		15		15	
Total (N)	5,825		4,066		1,759	

Note: Linked GGS (2004) and EES (2005) data; own calculations. ^a The confidence intervals (CI) are computed using bootstrapping (1,000 draws). Statistical test for change in Duncan index: $z=3.20$, $p<0.01$; statistical test for change in IP index: $z=4.36$, $p<0.001$. ^b Fifteen branches of economy are used (1) agriculture; (2) mining; (3) manufacturing; (4) power industry; (5) construction; (6) trade and consumer services; (7) transport and communication; (8) finance services; (9) state administration and compulsory social provision; (10) national defense; (11) health; (12) education; (13) culture and art; (14) other personal and communal services; (15) other or miss.

Taken together, results support Hypothesis *H1* that horizontal gender differences will be pronounced upon labor market entry. My findings also support Hypothesis *H3*, predicting increasing horizontal gender differences after the collapse of the Soviet Union.

5.5.3 Vertical inequalities

5.5.3.1 Descriptive results

Table 5–4 quantifies the overall (i.e., not adjusted by covariates) gender gap in job authority in the first job before and after the collapse of the Soviet Union.

Table 5–4: Proportion of men and women entering authoritative position in the first significant job by period of labor market entry

	Soviet period (S)	Post-Soviet period (PS)	Risk ratio period (PS/S)	Total
Male (M)	11.55%	15.93%	1.38	13.12%
Female (F)	16.00%	18.09%	1.13	16.56%
Risk ratio gender (F/M)	1.39	1.14		1.26
Total (%)	14.44%	17.11%	1.19	15.24%

Note: Linked GGS (2004) and EES (2005) data; own calculations.

In my sample, about 13% of male and 17% of female entrants enter authoritative positions. Thus, I find a gender gap with a female advantage over both periods in Russia. The risk ratio

of women entering authoritative positions during the Soviet period is 1.39. After the collapse, this advantage declined to a risk ratio of 1.14. Compared with the Soviet period, entry into authoritative positions is more frequent in the post-Soviet period. One reason might be that the newly established economy values the new skills and knowledge provided by younger graduates. Moreover, for male entrants, the likelihood of job authority rises by a factor of 1.38 compared with only 1.13 for female entrants. Evidently, male entrants have gained more from the collapse of the Soviet Union.

5.5.3.2 Multivariate results

The results of the binominal logistic regression equations predicting the likelihood of entry into authoritative position in the first significant job are presented in Table 5–5.⁵⁸

Consistent with the descriptive results, I find that female entrants generally have a higher probability of entering authoritative positions (Model 1) that remains stable even after controlling for the period of entry (Model 2). Accordingly, the odds of entry in an authoritative position are 34% ($=100 \times [1 - \exp(0.30)]$) higher for females than males, net of entry period. The average predicted probability⁵⁹ amounts to 13% for men and 17% for

⁵⁸ The statistical test of the interaction terms between female and the corresponding categorical variable should be always interpreted relative to the reference category. The interaction tests whether the contrast between the reference category and category of interest is the same for men and women. Non-significant contrast suggests that contrast is constant on the scale of odds. It might be different on the scale of probability due to different baseline probabilities (see Table C–4 in Appendix C).

⁵⁹ The average predicted probability of outcome (having an authoritative position) for female and male entrants is the average of the probability among actual persons in the data. In this sense, I compare two hypothetical populations – one with all female and one with all male entrants – that have the exact same values on the covariates in the model. Accordingly, the difference between these two populations is their gender, and gender might be a “cause” of the differences in the probability of having an authoritative position (see Williams, 2012 for similar explanation).

This is different than predicted probability at the average of covariates. That is, the probability of a person with average characteristics (e.g., female entrants who might have entered 7/10 during the post-Soviet period and attained 13/100 higher educational level). Average predicted probability can also be termed a typical predicted probability for someone within a group (e.g., female); predicted probability on average can be termed the predicted probability for someone with typical values on the explanatory variables for someone within that group (Buis, 2007). For my purposes, I have found the average predicted probability is more convenient than

women; this gender gap is statistically significant. Furthermore, individuals entering during the post-Soviet period are more likely to be in authoritative positions than those entering under the Soviet regime.

Table 5–5: Logistic regression models predicting entry into authoritative position in first significant occupation (results as log odds ratios). N=5,825

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Female (ref. Male)</i>	0.27***	0.30***	-0.15	-0.59***	-0.59***
<i>Post-Soviet labor market entry (ref. Soviet labor market entry)</i>		0.23**	-0.37***	-0.46***	-0.43***
<i>Educational level, ref.: Secondary professional</i>					
Incomplete secondary			-2.61***	-2.44***	-2.70***
Lower vocational			-1.98***	-1.76***	-1.77***
Secondary completed			-1.73***	-1.76***	-1.76***
Higher			1.91***	1.90***	1.91***
<i>Branch of economy (ref. Manufacturing)</i>					
Agriculture				0.15	-0.07
Mining				-0.12	-0.10
Power industry				0.16	0.14
Construction				0.52*	0.50*
Trade and consumer services				0.06	-0.03
Transport and communication				0.10	0.03
Finance services				1.04**	1.00**
State services				0.79***	0.70***
Health				0.39*	0.28
Education				2.41***	2.29***
Other communal, social, and personal services				1.03***	0.91***
Other or miss				0.32	0.32
<i>(Controls in model 5 omitted; see Table C–3 in Appendix C)</i>					
Constant	-1.89***	-1.98***	-1.12***	-1.52***	-1.54***
Model fit					
Log Likelihood	-2,480	-2,476	-1,7776	-1,588	-1,578
χ^2	13	22	1,422	1,798	1,818
Degrees of freedom	2	3	7	19	27
AIC	4,965	4,958	3,566	3,214	3,209
BIC	4,978	4,978	3,613	3,340	3,389
Adjusted McFadden R ²	0.00	0.00	0.28	0.35	0.36
Female APE	3.44***	3.71***	-1.37	-4.85***	-4.87***

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. APE=average partial effect, scale in percentage points.

Educational level is connected to higher chances of job authority in the first job, net of gender and period effect (Model 3). Yet, I note two interesting shifts in the effects of gender and

e.g., predicted probability on average because no real person can have such characteristics as 13/100 higher educational level.

period: First, vertical inequalities (which disadvantaged males in Model 2) between female and male entrants disappear. Estimates show that compared with men, women's odds are lower by a factor of 0.86. The average predicted probability is 15% for women and 16% for men, which, however, does not differ statistically. Second, the coefficient for post-Soviet entry period becomes negative. Correspondingly, entrants in the post-Soviet period seem to have lower chances of gaining authoritative positions, net of gender and educational level. Hence, educational level appears to mediate the overall and partial effects of gender and entry period as already found in the descriptive analyses (Table 5–4) and Models 1 and 2. Accordingly, the observation that women compared with men and post-Soviet compared with Soviet entrants in total have a higher likelihood of job authority can be traced back to their higher educational level.

Model 4 accounts for horizontal differences in the first job by including dummy variables for branches of the economy. *Ceteris paribus*, the education sector is associated with the highest likelihood of obtaining job authority (the average predicted probability is 38%), followed by finance services and other communal, social, and personal services (19%); state services (16%); construction (14%); health (13%); agriculture and the power industry (11%); manufacturing, trade, and transport (10%); and finally, mining (9%). These results highlight important differences between sectors in opportunities of getting an authoritative position in the first job: More opportunities can be found in the rather feminized branches, whereas employers are probably more reluctant to hire labor market entrants in predominantly male areas (with the exception of the trade sector) requiring previous labor market experience.

Model 4 additionally shows a statistically significant gender gap that inverts the sign (female APE=−4.85 percentage points, $p<0.001$), accounting for differences in education, period of entry, and entered branch. The gap remains significant even after including several controls in Model 6 (Female APE=−4.87 percentage points, $p<0.001$). Thus, net of education, period, and branch, we find support for Hypothesis *H2* predicting vertical inequalities disadvantaging females already at labor market entry.

Turning to the question of changes in vertical inequalities over time (Model 6, Table 5–6), the significant interaction effect implies that female entrants were less likely than male entrants to enter authoritative positions under the Soviet regime. Although I find no statistically significant effect of entry period for men, the interaction effect reveals that the chances for women to obtain authoritative positions have been declining in the post-Soviet

period (coefficient: $-0.41-0.50=-0.91$). I plot the relationship between gender and entry period (expressed in predicted probabilities) in Panel A of Figure 5–1. This reveals an increased gender gap to the disadvantage of females (see also Table C–4 in Appendix C) due to a growing disadvantage of female entrants and not to a growing advantage of male entrants.⁶⁰ Taken together, the results support Hypothesis *H4*, which predict an increase in vertical gender inequalities to the disadvantage of females after the collapse of the Soviet Union.

Examining interaction effects between gender and educational level (Model 7, Table 5–6), I find that the gender gap emerges only among more-educated individuals, being largest among entrants with the highest degree (see Panel B in Figure 5–1 for prediction, and Table C–4 in Appendix C for a statistical test of the gender gap). Among higher-educated entrants, women’s odds of entry into an authoritative position are reduced by 64% compared with men (odds ratio=0.36). In absolute terms, this means that the probability of entering an authoritative position is 71% for higher-educated male entrants compared with only 49% for higher-educated female entrants (a gender gap on the probability scale of 22 percentage points).

The final model revisits the relationship between horizontal differences and vertical inequalities, that is, whether the gender gap varies by branch of economy (Model 8, see Panel C of Figure 5–1). Regression results indicate that the female disadvantage is by far the highest among those entering the education sector. On average, females’ predicted probability is 16 percentage points lower than that of males, and this difference is statistically significant (see Table C–4 in Appendix C). Furthermore, we find a gender gap to the female disadvantage among those entering state services and trade and consumer services (statistically significant), and in finance services (however, this trend does not attain the conventional significance level). Intriguingly, most of the sectors revealing a statistically significant female disadvantage are highly feminized occupational areas.

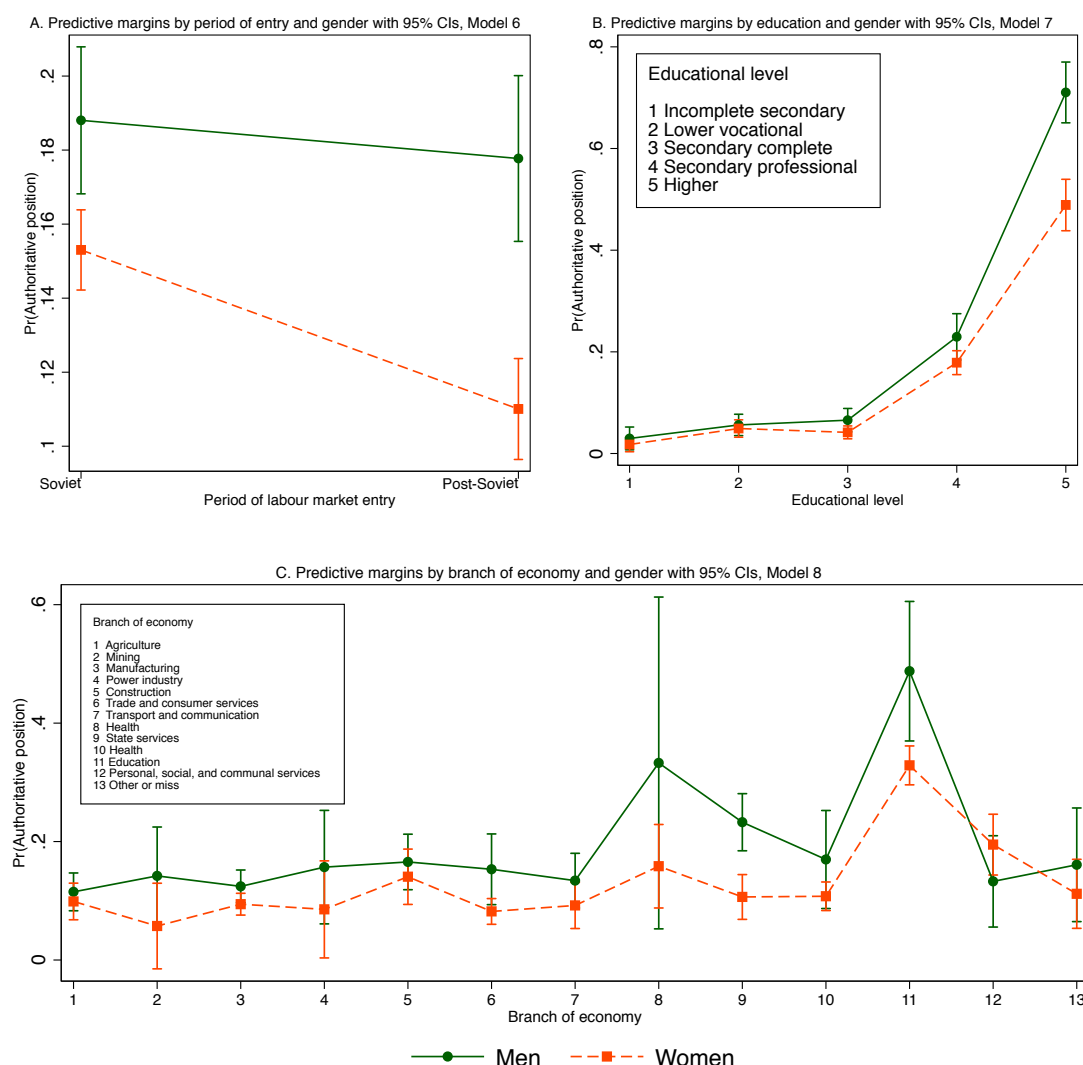
⁶⁰ The Wald test of the female effect for those entering during the Soviet period: $p<0.01$, during the post-Soviet period: $p<0.001$. The Wald test of post-Soviet entry effect for males: $p=0.496$; for females: $p<0.001$.

Table 5–6: Logistic regression models predicting entry into authoritative position in first significant occupation with interaction terms (results as log odds ratios), N=5,825

	Model 6	Model 7	Model 8
<i>Female (ref. Male)</i>	-0.41**	-0.36*	-0.41
<i>Post-Soviet labor market entry (ref. Soviet labor market entry)</i>	-0.12	-0.43***	-0.42***
Female × Post-Soviet labor market entry ^a	-0.50*		
<i>Educational level, ref.: Secondary professional</i>			
Incomplete secondary	-2.70***	-2.53***	-2.67***
Lower vocational	-1.75***	-1.82***	-1.76***
Secondary completed	-1.75***	-1.64***	-1.77***
Higher	1.92***	2.37***	1.90***
Female × Incomplete secondary ^a		-0.18	
Female × Lower vocational		0.21	
Female × Secondary completed		-0.15	
Female × Higher		-0.67**	
<i>Branch of economy (ref. Manufacturing)</i>			
Agriculture	-0.05	-0.06	-0.12
Mining	-0.12	-0.07	0.21
Power industry	0.16	0.13	0.37
Construction	0.51*	0.53*	0.46
Trade and consumer services	-0.02	-0.08	0.33
Transport and communication	0.03	0.05	0.12
Finance services	1.02**	0.99**	1.8
State services	0.69***	0.66***	1.07***
Health	0.29	0.26	0.51
Education	2.30***	2.27***	2.72***
Other communal, social, and personal services	0.89***	0.90***	0.10
Other or miss	0.30	0.31	0.41
Female × Agriculture ^a			0.19
Female × Mining			-0.87
Female × Power industry			-0.51
Female × Construction			0.14
Female × Trade and consumer services			-0.53
Female × Transport and communication			-0.15
Female × Finance services			-1.00
Female × State services			-0.90*
Female × Health			-0.31
Female × Education			-0.53
Female × Other communal, social, and personal services			1.06
Female × Other or miss			-0.17
<i>(Controls in models 6, 7, and 8 omitted; see Table C–3 in Appendix C)</i>			
Constant	-1.68***	-1.70***	-1.65***
Model fit			
Log Likelihood	-1,575	-1,573	-1,569
χ^2	1,824	1,829	1,836
Degrees of freedom	28	31	39
AIC	3,206	3,207	3,216
BIC	3,392	3,414	3,476
Adjusted McFadden R ²	0.36	0.36	0.35
Female APE	-4.70***	-4.58***	-5.44***

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. APE=average partial effect, scale in percentage points.

Figure 5–1: Predicted probabilities for authoritative position based on logistic regressions in Table 5–5



Note: Linked GGS (2004) and EES (2005) data; own calculations. Panel A for interaction period \times gender; Panel B for interaction educational level \times gender; Panel C for interaction branch of economy \times gender.

Linking our findings for vertical and horizontal outcomes, the growing vertical gender gap among post-Soviet entrants (found in Model 6) might be attributable in part to the more pronounced horizontal segregation following the collapse of the Soviet Union (see Table 5–2 and Table 5–3).

Notably, the descriptive inquiry revealed higher odds of job authority for women, pointing to a female occupational advantage in total. Conversely, when accounting for educational and sectorial heterogeneity among sexes in the regression analyses, we detected a gender gap in

the odds to the reverse. Obviously, educational level and sectorial choice represent factors suppressing the actual negative effect of being female. Women are more likely to have higher educational levels and are more likely to begin their careers in sectors providing more opportunities for job authority. Consequently, that makes them more likely to enter authoritative positions in total, whereas we found a substantial female disadvantage when comparing men and women and holding educational level and sector constant. In this sense, if there were no genuine gender differences in job allocation (i.e., no adjusted significant negative coefficient for females) we would find a higher total female surplus in authority positions due to their educational surplus and stronger tendency towards branches providing better opportunities for authoritative positions.

5.5.3.3 Robustness check: factual and synthesized probabilities

The multivariate analyses have demonstrated that gender inequalities in job authority in the first job might be regarded as (a) inequalities in educational attainment and branch choice, but also as (b) inequalities in the propensity of entering authoritative positions, conditional on educational attainment and branch choice. In other words, there is a total effect of gender on the outcome, and this effect is positive (as shown in descriptive analyses). However, there are correlates of gender that also correlate with the outcome under study. In substantial terms, this means that women more often enter higher education, and this levels up the odds of entering authoritative positions. The same holds for specific branches (e.g., finance). The part of the total gender effect that is mediated by educational attainment and branch choice can be termed the “indirect effect” of gender (the confounding or, as in my case, the suppressing effect). What remains is the “direct effect” of gender, that part of the total effect that cannot be attributed to education or the entered branch, which is negative in sign.⁶¹

In the following, I use a counterfactual analysis to calculate the relative importance of the direct and indirect effects of gender on the probability of entering an authoritative position among Russian labor market entrants. This method is widely used in the research on inequalities in educational opportunities (Jackson, 2013) and was first introduced by Jackson,

⁶¹ This way of thinking is very prominent in research on inequalities in educational opportunities when referring to primary (indirect) and secondary (direct) effects of social origin (e.g., Jackson, 2013).

Erikson, Goldthorpe, and Yaish (2007) and generalized by Buis (2010).⁶² By applying this method, I additionally provide a robustness check of my results. The general logic behind is to calculate “synthetized”, i.e., potential, predicted probabilities in a hypothetical situation, in which female (male) educational and sectorial distributions are combined with male (female) propensities of entering authoritative positions (cf. Kartsonaki, Jackson, & Cox, 2013). For instance, one could ask how the proportion of men (women) entering authoritative positions would change if men (women) had educational attainment and met women’s (men’s) branch choices but had their own propensity of entering job authority. Otherwise, we may assess the proportion of men (women) entering an authoritative position if men (women) had their own educational and sectorial distribution but took on women’s (men’s) propensity of entering job authority (conditional on educational and sectorial distribution).

Table 5–7 presents the factual and synthesized predicted probabilities of entry into an authoritative position in Russia. The rows display synthetized predicted probabilities and log odds calculated using the education and sector distribution of male and of female entrants. The columns denote the predicted probabilities and odds after exchanging the conditional authority probability functions for male and female entrants. These probability functions can be understood as a combination of employers’ and employees’ gender-specific choices. Employers’ gender-specific choices may designate discrimination behavior, while employees’ choices may refer to their own preferences for job-specific attributes, such as authority.

The factual predicted probability of entry into authority is 16.7% for female entrants. If these female entrants had an educational endowment and met the sectorial choices of male entrants, their predicted probabilities of entering an authoritative position would decrease by 7 percentage points to 9.7%. However, if female entrants had the authority probability function of male entrants (i.e., their propensity of entering an authoritative position), their predicted probability would increase by 5.5 percentage points to 22.2%. In turn, when looking at men, we find that the factual predicted probability of entry into authority is 13.6%, and this would

⁶² More information and a formal description of the method can be found in Buis (2010), Erikson, Goldthorpe, Jackson, Yaish, & Cox (2005), Jackson et al. (2007), Kartsonaki et al. (2013)

(a) increase by 8.6 percentage points (to 22.2%) if they had females' educational and sectorial distribution but (b) decrease by 3.9 percentage points (to 9.7%) if they had females' propensity for entry into authority.

Table 5–7: Estimated factual and synthesized predicted probabilities and odds of entry into an authoritative position with respect to gender ^a

Distribution in education and sector	Choice of employers or employees (Probability function)	
	Male	Female
<i>Probabilities</i>		
Male	$P_{MM} = 0.136$	$P_{MF} = 0.097$
Female	$P_{FM} = 0.222$	$P_{FF} = 0.167$
<i>Log Odds</i>		
Male	$O_{MM} = 0.158$	$O_{MF} = 0.108$
Female	$O_{FM} = 0.285$	$O_{FF} = 0.200$

Note: Linked GGS (2004) and EES (2005) data; own calculations. ^a Estimates are calculated using the Stata ldecomp add-on program (Buis, 2010). In a given row, education and sector are held constant. In a given column, propensity to enter authoritative position is held constant. The diagonal elements represent factual combinations. Percentages can deviate from those shown in Table 5–4 due to the estimation procedure (cf. Buis, 2010; Kartsonaki et al., 2013). PP = predicted probabilities; O = odds; MM = men with education/sector distribution of men; MF = women with education/sector distribution of men; FM = men with education/sector distribution of women; FF = women with education/sector distribution of women.

Altogether, we can conclude that women would benefit if they had males' propensity of entering an authoritative positions (e.g., males' preferences for authority and employers' lower discrimination against male employees), whereas men would be disadvantaged in the case of female propensity functions. Contrarily, females' educational and sectorial distribution can be beneficial for men, while women would be disadvantaged by that of men. These findings indicate that women make a range of appropriate choices in their education and entered branch, and these choices would also increase the chances of male entrants for authoritative positions. However, due to specific gender preferences of employers and/or employees, women's propensity of entering an authoritative position is much lower (*ceteris paribus*) compared with men, and this is supported by the fact that men with female's propensity function would also be less likely to enter authority positions.

The total, direct, and indirect effects of females on the probability of entering an authoritative position are captured by a log odds ratio in Table 5–8. The total, direct and indirect effects of gender are expressed as:

$$Total\ effect = O_{FF}/O_{MM}$$

$$Indirect\ effect_1 = O_{FM}/O_{MM},\ Direct\ effect_1 = O_{FF}/O_{FM}$$

$$Indirect\ effect_2 = O_{FF}/O_{MF},\ Direct\ effect_2 = O_{MF}/O_{MM}$$

Overall, the odds of entry into authority for females are 1.27 times as high as for males (total effect). Males would have 1.81 times higher odds of entry into authority if they had the same educational and sectorial distribution as females (indirect effect according to method 1), while females would have 0.70 times lower odds of job authority than males if we kept the educational and sectorial distribution constant at the level of females (direct effect according to method 1). Notably, if there were no direct effect of being female (i.e., choices of employers and employees), the odds of females for authority would be 1.81 (1.81*1) times higher than those of males.

Table 5–8: Log odds ratios and estimates of the relative importance of the direct effect

	<i>Log odds ratio</i>	SE ^b	CI ^b
Total effect	1.27	0.08	(1.12, 1.43)
Indirect effect, method 1	1.81	0.08	(1.65, 1.97)
Direct effect, method 1	0.70	0.04	(0.62, 0.79)
Indirect effect, method 2	1.85	0.10	(1.67, 2.06)
Direct effect, method 2	0.68	0.05	(0.60, 0.78)
	<i>Relative importance of the indirect effect</i>	SE	CI
Method 1	2.48	1.22	(0.29, 4.68)
Method 2	2.59	1.21	(0.22, 4.96)
Average	2.54	1.16	(0.26, 4.82)

Note: Linked GGS (2004) and EES (2005) data; own calculations. ^a Estimates are calculated using the Stata ldecomp add-on program (Buis, 2010). ^b The standard errors (SE) and the confidence intervals (CI) are computed using bootstrapping (50 draws) (see Buis, 2010).

To assess the relative importance of the direct and indirect effects, following formulas are used:

$$Importance\ of\ indirect\ effect = \ln(indirect\ effect)/\ln(total\ effect)$$

$$Importance\ of\ direct\ effect = \ln(direct\ effect)/\ln(total\ effect)$$

As can be seen in the lower panel of Table 5–8, the relative importance of the indirect effect is 248% of the total effect. This can be read as a size of the indirect effect relative to the size of the total effect (Buis, 2010, pp. 25–26). Accordingly, the relative importance of the direct effect is -148% (248%–100%) of the total effect. These results may be interpreted as a 248%

indirect effect (educational and sectorial endowment) and a –148% direct effect (choices of employers and employees). Correspondingly, the education and sectorial endowment components are stronger than the employers' and employees' choice components, which favors women in total.

5.6 Discussion

Using retrospective data from the EES, I have examined the extent of horizontal gender differences and vertical gender inequalities upon labor market entry in Soviet and post-Soviet Russia. As expected, I have found that gender is an important factor influencing allocation in different branches of the economy and different hierarchical positions in the first job.

More specifically, my results confirm sectorial gender segregation in the first job. This represents one of the most important triggers for earnings differentials between the sexes in Russia (Katz, 1997; Ogloblin, 1999; Oshchepkov, 2008). The explanation for such differences is a higher female concentration in tertiary sectors of the economy (e.g., health, education, and trade) that were of low priority for policymakers under the Communist regime and consequently less well-paid (GOSKOMSTAT USSR, 1988), and this gendered behavior did not change with the transition to a liberalized labor market economy (Ogloblin, 2005b). Although some of the previously female-dominated sectors (e.g., the finance sector) have experienced a strong post-Soviet expansion, women seem to have been pushed out of sectors with growing wages in favor of men (Roshchin & Zubarevich, 2005). My analyses have shown that the vertical gap to the female disadvantage is particularly pronounced in those sectors that female entrants tend to enter.

Moreover, my analyses imply that Russian women invest a great deal in education, thereby gaining a serious educational advantage, which is further consolidated by entry into branches with more opportunities for authoritative positions. Correspondingly, female entrants do enjoy an occupational advantage overall. Nevertheless, when controlling for educational achievement and choice of branch, it becomes evident that female Russian entrants are effectively disadvantaged in terms of access to authoritative positions, suggesting that some other mechanisms are in place that affects females' lower returns to education compared with those of men. This might be caused by females' self-selection into lower occupational positions, e.g., because of higher preferences for a family–work balance. Moreover, prevailing cultural values and societal gender norms might cause men to pursue educational

choices and careers that comply with an anticipated male-breadwinner role. In turn, women's choices in favor of higher education are guided by a wider scope of aims. In this sense, Russian men seem to use education more instrumentally, while Russian women use it more strategically. Otherwise, these vertical inequalities might be a result of employers' discrimination against women (e.g., because of higher expectations of females' lower job commitment and higher absenteeism) or due to women's lower access to social networks (Reskin & McBrier, 2000; see also Ashwin & Yakubovich, 2005; Gerber & Mayorova, 2010 for Russia; Kogan et al., 2013 for Croatia, but not for Ukraine).⁶³ Because authority is associated with higher earnings, inequality in earnings might be attributed in part to inequality in authority. A closer look has revealed that the gender gap is most pronounced among the higher-educated labor market entrants (*ceteris paribus*), suggesting that women frequently do not fully convert their increasing educational advantage into an occupational one.⁶⁴

Furthermore, despite gender equality principles, I have found that in Soviet Russia, there was – *ceteris paribus* – a strong gender gap to the female disadvantage upon entry into authoritative positions and that this has even grown since the regime change in Russia. Notably, these growing gender inequalities can be traced back to declining chances of female entrants along with virtually no negative consequences for men. I explain this in two ways: institutionally and culturally. Following the institutional argument, “credential inflation” (i.e., the devaluation of degrees and the signaling power of certificates in post-Soviet Russia) might have affected women more than men due to an oversupply of female graduates with tertiary degrees (Roshchin & Zubarevich, 2005). Following cultural theories, three aspects might have reinforced gender stereotypes in the gendered division of labor that embraces domestic and labor market work: (1) growing labor market uncertainty, (2) new cultural

⁶³ Employers are more likely to rely more on informal recruitment channels like social networks if employment protection is very rigid (Gërxhani, 2016) as it has been the case in (post-)Soviet Russia (see Sections 3.4 and 3.5). Moreover, social networks seem to matter more for highly-educated job applicants in the case when educational credentials do not provide clear signals (Di Stasio & Gërxhani, 2015). That might have been true for Russia in the times of educational expansion particularly after the Soviet union collapse.

⁶⁴ This finding lends support to the claim that (Soviet) women opted for more education due to other incentives than a promise of more “material rewards”: “Higher education meant that someone could do non-manual work and avoid hard physical labor” (Titma et al., 2003, p. 293).

forms of male primacy shaped during the transition period, and (3) the introduction of family policies oriented towards “bringing women back home” (Teplova, 2007, p. 291). In turn, this rise of gender-stereotyped behavior might have not only “reduced” the ambitions of female entrants but also affected the hiring decisions of employers by favoring male entrants for “premium” jobs (Ogloblin, 1999). In this sense, one could view women as “the losers” of the transition from socialism to the market economy (for similar conclusions, see Brainerd, 1998; Gerber & Hout, 1998; Verhoeven et al., 2005).

My study contributes to the literature by providing empirical evidence for the existence and reinforcement of gender inequalities in the first job in the transition from the socialist to the post-socialist system in Russia. Nevertheless, to obtain a more complete picture of how the collapse of the Soviet regime and the subsequent regime changes have affected social inequalities, future research should study other post-socialist countries with various institutional transformations in order to better understand whether and how far cultural and regime changes shape gender inequalities. Moreover, although labor market entry may undoubtedly impact upon the following career developments, a further investigation of post-socialist countries should broaden the focus to encompass longer career trajectories: Are gender segregation and vertical gender inequalities stable over the life course? Do women and men converge or diverge in their labor market outcomes over the career path? Further studies on these issues will allow us to assess the long-term consequences of regime-related shifts in life-course inequalities.

Chapter 6

Inequality of adult-educational opportunity and regime change⁶⁵

6.1 Introduction

Previous literature has emphasized that the (educational) attainment process is socially structured and implies the existence of inequalities at the time of attaining initial education (Boudon, 1974), which are further reproduced and amplified over the labor market career (Müller & Shavit, 1998). This effect of “cumulative advantage” (DiPrete & Eirich, 2006) over the life course for already-advantaged individuals is also called the “Matthew Effect” (Merton, 1968). By enhancing one’s educational level and access to better jobs, adult education is believed to provide an effective means of reducing these initial inequalities and accordingly of offsetting the Matthew Effects (Hällsten, 2011).⁶⁶ In this context, adult education has been described as a “second chance” system that offers opportunities for “those who failed in their schooling” or for those who “never had a first chance” (Jarvis, 2007, p. 191).

Access to adult education, however, is not allocated equally and is more accessible for individuals who have already achieved relatively advantaged educational or labor market positions (Elman & O’Rand, 2004; Hällsten, 2011; K. Kim, Hagedorn, Williamson, & Chapman, 2004). This phenomenon can be viewed as inequality of educational opportunity in the later life course. Understanding how adult education is socially stratified is essential for understanding whether and to what extent (initial) social inequalities may be alleviated or even amplified by lifelong educational attainment processes. The purpose of this study,

⁶⁵ This chapter is a modified and extended version of Kosyakova, Y. (forthcoming). Inequality of adult-educational opportunity and regime change in Russia. In preparation for submission to *European Sociological Review*.

⁶⁶ The reasons to return to education as an adult are very heterogeneous and vary from personal to social and professional goals. However, in the scope of this study, I concentrate on adult education that is relevant for professional goals.

therefore, is to analyze participation in adult education in Russia, conditional on the structures of the social inequalities that emerged over earlier attainment processes. As I argue, one might expect very different effects of participation in adult education on overall levels of opportunity. Adult education may have an equalizing effect on educational inequality if initially disadvantaged individuals (educationally and/or in the labor market) have either equal or more access to adult-education opportunities. Otherwise, if the initially advantaged groups also have a higher propensity for participation in adult education, this may result in an exacerbation of educational inequality, and thereby social inequality in general.

I focus on the case of Russia as an example of the “transitional societies” characterized by a “very distinctive social reality” (Titma et al., 2003, p. 281). Studying stratification in access to adult education should be particularly interesting and relevant in such societies which have experienced immense institutional and cultural shifts and an expansion of social inequalities after the collapse of the Soviet Union.

Although the core dogma of the communist regime asserted that everyone had equal life chances, some levels of social inequality did exist in the Soviet Union, e.g., in terms of income (Dobson, 1977) or education (Gerber & Hout, 1995). Therefore, it is of sociological interest to examine whether and to what extent the inequality in access to adult education existed under the communist regime. In the aftermath of liberalization reforms and radical structural changes, an essential part of the labor force was compelled to (re-)invest in education in order to pursue successful integration into the newly restructured and/or newly emerged labor market segments (Bocharova, 2002). Since investment in education usually involves considerable time and monetary efforts, it is obvious that the opportunities for adult education were unequally distributed. Hence, it is important to study whether adult education was effective for coping with social inequalities that developed during and after institutional restructuring as well as how these patterns have changed compared with the communist regime. In a broader sense, studying stratification in access to adult education and its role for social inequality in post-socialist countries is particularly relevant for a better understanding of how institutional and political change may affect individuals’ life courses.

Nonetheless, adult education has received little attention in Russia from the sociologists in recent years.⁶⁷ To my knowledge, only few studies have examined adult education in the form of upgrading and obtaining a formal degree in contemporary Russia (Kilpi-Jakonen et al., 2012; Kosyakova, Dämmrich, & Blossfeld, 2016; Kosyakova, 2014). Even less is known about the participation patterns of the so-called “sidesteppers,” i.e., those who obtain a formal degree at the same or a lower level as that of their initial educational attainment.⁶⁸ The qualitative distinction between upgrading and sidestepping is crucial because in the case of upgrading, the individual builds up his or her previous education. In contrast, sidestepping often implies a depreciation of the previously accumulated human capital (Li, Buchmann, König, & Sacchi, 1998). Yet, for many individuals sidestepping might be the only strategy to keep up with rapidly changing demands of labor markets in restructuring economies where many former industries and qualifications suddenly have disappeared. Hence, sidestepping should be a very important mechanism to lessen the inequalities that have developed, particularly when viewed against Russia’s background of structural economic changes in the labor market after 1991, which have led to the “great human capital reallocation” (Sabirianova, 2002, p. 191).

In light of the aforementioned arguments, the following research questions on inequality in adult-educational opportunity emerge: First, “who” takes part in adult education in transitional societies? Second, has the social structure of adult education changed from before to after the fall of the Communist regime (i.e., by institutional structures), and if so, how? Third, “who” opts for which strategy of adult-education – upgrading or sidestepping? To address these questions empirically, I examine the gap between initially advantaged and disadvantaged individuals (in terms of the initial educational and labor market attainment) in enrollment to formal schooling in the later life course. I use retrospective data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey

⁶⁷ Available research in Russia has focused primarily on the training and been mainly from the economic perspective (e.g., Berger et al., 2001; Clarke & Metalina, 2000).

⁶⁸ Using a field of studies (which is not available in the data used) would be another possibility to measure sidestepping. Nonetheless, individuals enrolling in education that is at the same level or below are likely either to change their field of study or to study an additional qualification that is complementary to the previous one. In contrast, studying a qualification in the same field of studies at the same or a lower level is less meaningful.

for Russia (EES), which cover the years between 1965 and 2005, thus enabling the analyses of the Soviet and post-Soviet periods. The rich data on educational trajectories allows for distinguishing between enrollment in education that is higher than that previously attained (upgrading in the following) as well as for enrollment in education at the same level or below (sidestepping in the following).

The next section provides a short overview of the framework of adult education before and after the collapse of the Soviet Union in Russia. Furthermore, based on theoretical considerations and a review of empirical studies, I establish a link between social inequality and adult education which I call inequality of adult-educational opportunity. I thereby explicitly concentrate on initial educational and labor market attainment and derive hypotheses for the Russian case. Subsequently, my data, methods, and variables are described before moving to the main results. Finally, I summarize the main findings and discuss their implication for social inequality in Russia.

6.2 National context

The Soviet government has emphasized the importance of adult education as an essential component of lifelong learning. Before the fall of the Soviet Union, adult education was an established system (Kljucharev, 1997) with a considerable network of participating educational institutions and included compulsory education and improvement of qualifications (Zajda, 2003). In the middle of the twentieth century, the adult education framework included evening schools and correspondence schools and was under state control.

With the growing concept of lifelong learning between 1960s and 1970s adult education became more abstract and included voluntary and governmental institutions (Zajda, 2003). In fact, every adult was involved in some type of education every 5 to 7 years (Berger, Earle, & Sabirianova, 2001; Zajda, 2003). Between 1940 and 1980, participation rates in qualification upgrading grew from 1.7 to 32.7 million workers and employees. In turn, obtaining new qualifications (i.e., changing specialties or professions) grew from 1.9 to only 5.9 million workers (GOSKOMSTAT USSR, 1981, p. 376). Such small increase can be traced back to the communist view of discontinuity and instability of the working path: Being re-trained or needing to find a new job was considered a life failure (Kljucharev, 1997). By the end of the

communist period, 42.7% of the active population participated in adult education in various forms (Bim-Bad, Sokolova, & Zmeyov, 1992).

Nonetheless, despite on the full equality principles, the access to education was quite ambivalent. For instance, there were quotas and reserved places, financial support for working mothers, disabled, ethnic minorities, military people and workers. Yet, Jews and the so-called “enemies of the people” (and their families) faced problems in access to adult education (Khokhlova et al., 2013). Also, the access to prestigious courses such as management, economics and law was heavy restricted (Kljucharev, 1997).

With the demise of the Soviet Union, a series of official acts regarding adult education were adopted.⁶⁹ The main goals of adult education became (a) preventing structural unemployment through re-training, (b) preparing qualified workers for the new economy, and (c) the compensation of inequalities in access to secondary education (Zajda, 2003). Nonetheless, despite various important presidential decrees, free access, and guaranteed funding, the whole education sector suffered from a lack of adequate financing (Berger et al., 2001; Zajda, 2003; see also Section 3.3, for discussion).

At the times of the economic restructuring, adult education was provided in the form of so-called evening classes for adults. However, these evening schools had a bad reputation by employers due to the heterogeneity of the student. Due to the displacement of millions of people after the fall of the Soviet Union, the learners at evening schools became more heterogeneous and comprised (apart from working adults) military members, the unemployed, migrants, ex-prisoners, pensioners. Additionally, unemployment among youth and school graduates became very high, forcing them to continue their education in evening schools (Zajda, 1991). There were, moreover, problems related to equivalence of academic standards, the academic status of these schools, and the recognition of diplomas (Zajda, 2003). First in the year 1996 the Attestation and Accreditation Act concerned with educational systems standards, excellence and quality was adopted and also included adult education (Zajda, 2003).

⁶⁹ Reforms of the educational sector included decrees related to part-time evening schools for adults, to adult education infrastructure, to its organizational structure, educational programs, a shorter working week on full pay for working adult learners.

Although Russia implemented new lifelong learning policies in accordance with UNESCO proclamations in the late 20th century (Ministry of Education, 2009), there is no separate branch of adult education within the formal educational framework, the only exception being for post-graduate studies. The normative legal base is weak, and there is no special legislation (Khokhlova et al., 2013). Formally, the main types of formal adult education include all forms of initial education, post-tertiary professional education, and supplementary professional education. The latter can be obtained in formal educational institutions and includes additional training (i.e., qualification updating) and re-training (professional training programs to acquire a new or additional qualification). The participation rates in formal adult education (including post-graduate studies) are much lower compared with the Soviet times and comprised only 4.5% of the population in 2006 (GU VShE, 2010).

Nevertheless, it is a matter of fact that obtaining a second or even third tertiary degree is typical for Russia (Aistov, 2009) and has become increasingly relevant for professional career mobility (Dubin et al., 2004). This is corroborated by the finding that almost half of university graduates are planning to return to education in future in order to gain a second tertiary degree (MEMO, 2013). A share of 20% of Russian young adults consider obtaining a second tertiary degree as a suitable instrument to enhance their prospects for socio-economic upward mobility (Dubin et al., 2004).

6.3 Theoretical framework on participation in adult education

From a sociological viewpoint, (formal) adult education is an important tool for lessening social inequalities that emerged in the earlier life course because it creates the possibility to improve an initial educational level, to change a qualification, and to update skills and knowledge. All these adjustments, in turn, might be essential for the labor market position enhancement and career development (Hällsten, 2011). Nevertheless, there is no consensus on how opportunities for adult education are socially structured, and empirical findings with regard to the initial human capital investments and labor market situation of the adult learners are inconclusive. For instance, it has been shown that (a) adult learners tend to be individuals who have already achieved relatively higher initial education but have experienced some disadvantages in the labor market (Felmlee, 1988; Hällsten, 2011; Kilpi-Jakonen et al., 2012 for Sweden), or (b) adult learners have a rather lower educational background but more advantageous labor market positions (Kilpi-Jakonen et al., 2012 for Russia and the UK; Kosyakova, 2014).

I argue that these manifold results regarding both initial educational and current labor market attainment on the propensity of participating in formal adult education may arise because previous research has neglected the difference between upgrading (investments in higher-level education) and sidestepping (investments in the same or lower-level education). These two strategies differ substantially in the role of the accumulated human capital. Upgraders use initial investments in human capital and build upon their previous educational attainment and field of studies. Conversely, sidesteppers experience some depreciation of the initial human capital investments (Li et al., 1998, p. 53) and instead opt for a different field of study, probably owing to frustration with their current job or to a lack of prospects for a further career. On the other hand, additional qualifications might be in a similar or close field of study. In this way, sidesteppers would not loose but enlarge their qualification which could provide better opportunities for reaping labor market returns.

In the following section, I discuss how the previous initial educational level and labor market experience may encourage but also constrain adults to upgrade and to sidestep.

6.3.1 Initial educational attainment

Higher-educated individuals should be more reluctant to return to formal schooling in the later life course because the higher the initial investments in education are, the higher the forgone earnings in the case of enrolling in formal adult education tend to be (Schömann & Becker, 1995). Additionally, the higher-educated should be less likely to upgrade due to the so-called “ceiling effect” (H.-P. Blossfeld et al., 2014, p. 9). This means that the higher the initial education is, the less room there is for attaining education that is at a higher level than previous education. However, among those who are seeking to broaden or change their qualification field (i.e., sidesteppers), particularly higher-educated individuals may be prone to return to formal schooling in the later life course due to the positive attitudes toward learning and the greater appreciation of education (Bills, 2000; Elman & O’Rand, 2007).

Although lower-educated individuals would have enough room to move up in terms of educational level, they may be deterred by negative earlier life-course experiences with schooling, a lack of self-efficacy, or merely due to the fact that they place a lower value on (adult) education (Valentine & Darkenwald, 1990). In general, it is actually the medium-educated who should be the most likely to upgrade. This expectation can be further supported by the fact that Russians put great importance on education, and more than half of working-age population have tertiary degrees (see Section 3.3.2). These peculiar developments in

Russia are likely to impose a pressure particularly for medium-educated individuals to upgrade their qualifications, leading to a “catching up effect” (Kosyakova, 2014).

In sum, I expect that:

H1: Having a medium (compared with lower or higher) initial-educational level increases the probability of enrolling in upgrading.

H2: Having a higher (compared with lower or medium) initial-educational level increases the probability of enrolling in sidestepping.

If both hypotheses are valid, then upgrading would contribute to some equalization of adult-educational opportunity, whereas sidestepping would contribute to an exacerbation of unequal adult-educational opportunity.

6.3.2 Occupational resources

Empirical findings reveal that adult learners tend to be employed (see Kilpi-Jakonen et al., 2012 for Russia and the UK; K. Kim et al., 2004), have higher earnings (Hällsten, 2011), and have higher occupational status and/or positions (Elman & O’Rand, 1998; K. Kim et al., 2004; Kosyakova, 2014). These individuals not only have the economic resources to return to time- and cost-intensive formal adult education, but may also have a stronger need for keeping up to date (Carr & Sheridan, 1999; Elman & O’Rand, 2007) or for maintaining an occupational status (Hällsten, 2011). Thus, individuals in advanced occupational positions should be particularly prone to upgrading in order to retain their competitive advantage in the labor market. Conversely, they should be particularly averse to sidestepping as they would “have more to lose” due to the potential for lost income (Carr & Sheridan, 1999; Schömann & Becker, 1995) and might consequently be the least interested in it (Valentine & Darkenwald, 1990).

Individuals in less-favorable economic circumstances might also be responsive to adult education. For instance, lower wages (Jepsen & Montgomery, 2012; Stenberg, 2011; Zhang & Palameta, 2006), working part-time (Zhang & Palameta, 2006), and (previous) unemployment experience (Hällsten, 2011; Stenberg, 2011) were found to “push” individuals toward adult education. Although both upgrading and sidestepping may be good instruments to exit such disadvantaged labor market positions, these individuals should obviously be more inclined to change their qualifications over sidestepping, owing to rather negative

experiences with the current qualification. In support of this expectation, it has been shown that adults tend to obtain new qualifications, particularly when they have had experience of unemployment and belong to lower classes in the occupational hierarchy (Berger et al., 2001).

As a result, I expect that upgrading would contribute to an exacerbation of adult-educational opportunities while sidestepping would have an equalization effect. This effectively means that I hypothesize that:

H3: Having more (compared with less) favorable occupational positions increases the probability of enrolling in upgrading.

H4: Having more (compared with less) favorable occupational positions decreases the probability of enrolling in sidestepping.

6.3.3 Regime change

Another important aspect relates to the role of regime change in Russia with regard to inequality of adult-educational opportunity. In the following section, first I discuss how the regime change can shape the amount of adult education and second, I detail this change's effect on the patterns of participation in adult education.

Technological change, globalization, and innovations lead to the fast deterioration of outdated skills and knowledge and to a stronger depreciation of previously accumulated human capital (Bartel & Sicherman, 1998; Buchholz et al., 2006). These structural changes may increase the incentives of firms and workers to invest in adult education in order to be able to meet the requirements of the changing labor markets and to stay competitive (see Bartel & Sicherman, 1998 for similar arguments). However, the same macro trends contribute to growing labor market uncertainty. As a result, risk-averse firms and workers would be less likely to invest in adult education due to the vague returns to adult-education investments and the potential obsolescence of the new skills (Berger et al., 2001).

With the fall of the Soviet Union, the processes of overall economic and market development accomplished by the devaluation of the skills and knowledge obtained under the Soviet Union suggests a growing demand for adult education on the one hand. Additionally, individual productivity is rewarded by the market's instigation of growing returns to human capital investments ("The market incentive thesis," Nee, 1989). This, in turn, should increase

individuals' incentives and effort to return to formal schooling, which results in the following expectation:

H5a: Being exposed to the post-Soviet period increases the probability of enrolling in both upgrading and sidestepping.

On the other hand, liberalization reforms and labor market restructuring were associated with more “shock” than “therapy,” with high labor market uncertainty and growing unemployment (Gerber & Hout, 1998). In turn, unemployment rates are found to be inversely related to participation in adult education (Wolbers, 2005). This might be further intensified by a lack of funding and a shortage of qualified trainers in post-Soviet Russia (Berger et al., 2001). Additionally, while adult education under the Soviet Union suggests improvements in the labor market situation almost in all cases (owing to the strong link between educational qualification and occupations) (Gerber, 2003), after the fall of the Soviet Union, the low signaling function of the certificates and the subsequent vague returns may reduce incentives to enroll in adult education. As result, the contrasting hypothesis is:

H5b: Being exposed to the post-Soviet period decreases the probability of enrolling in both upgrading and sidestepping.

It is less clear how regime change has affected the inequalities in access to adult education in terms of both initial educational and labor market attainment. Nonetheless, it is reasonable to assume that these inequality in adult-educational opportunity has been growing since the collapse of the Soviet Union. First, the structural changes made after 1991 and the liberalization of the labor market have led to growing stratification in labor market opportunities and risks, benefiting those already in good positions while disadvantaging those in less-secure positions (Brainerd, 1998; Gerber, 2003, 2012). Second, decentralization and the growing privatization of the educational sector have led to increased costs of education, which also implies fewer chances for disadvantaged groups. These arguments predict an exacerbation of inequality of adult-educational opportunity after the fall of the Soviet Union, which means that:

H6: The negative effect of the post-Soviet period on the probability of enrolling in upgrading and sidestepping should be weaker for those with a higher (compared with lower- and medium-)initial-educational levels.

H7: The negative effect of the post-Soviet period on the probability of enrolling in upgrading and sidestepping should be weaker for those with more (compared with less-)favorable occupational positions.

6.3.4 Gender

Finally, the existing literature suggests that choices for adult education differ by gender, albeit unequivocal answers are missing in the literature. While some studies report a higher probability for women to participate in formal adult education (Dämmrich, Vono de Vilhena, & Reichart, 2014; Fouarge & Schils, 2009; Kilpi-Jakonen et al., 2012 for Russia and Sweden), other studies find higher participation rates for men (Kilpi-Jakonen et al., 2012 for Spain; Wolbers, 2005) or no significant gender differences at all (Kilpi-Jakonen et al., 2012 for the UK; Kosyakova, 2014).

Particularly competing family roles may propel women to return to education later in life in order to compensate loss of labor market experience caused by employment interruptions (Dieckhoff & Steiber, 2011). However, there are also several arguments for female participation to be lower than male. First, the double burden of paid and unpaid work hinders adopting again a students' roles. (Married) women may be burdened with both market and domestic work limiting time available for alternative and not directly productive activities like adult education (Bianchi, Milkie, Sayer, & Robinson, 2000). In line with that it has been shown that women's decision to obtain formal adult education seems to be more dependent on family or household characteristics: Lower family income (Zhang & Palameta, 2006), being married or cohabited (Cai, 2011; Zhang & Palameta, 2006; though, see Hällsten, 2011 for contra-evidence) and having (young) children (Hällsten, 2011; Kilpi-Jakonen et al., 2012 for Sweden; Zhang & Palameta, 2006; though, see Kosyakova, 2014 for contra-evidence) decrease women's probability to attend adult education.⁷⁰ Moreover, women are said to invest less in education due to their (potentially) higher labor market absenteeism, their desire for a life-work balance, and/or their preferences for jobs requiring less human capital

⁷⁰ Males participation patterns seems to be more driven by employment characteristics (Zhang & Palameta, 2006), such as lower wages (Elman & O'Rand, 2002; Zhang & Palameta, 2006), working part-time (Zhang & Palameta, 2006) and working in larger firms (Zhang & Palameta, 2006).

upgrading (G. S. Becker, 1985; Hakim, 2006; Polachek, 1981), and this pattern may persist in regard to adult education (Bills, 2005).

In the Russia's context specifically, the quite early retirement age for Russian women (55 for women and 60 for men) may impede the recouping of (later) human capital investments. This shorter horizon in working life, in turn, may further reduce incentives of Russian women to return to education in the later life courses. Therefore, overall the I expect that:

H8: Being female (compared to male) reduces probability of enrolling in upgrading and sidestepping.

One could argue that gender differences in participation in adult education are less pronounced in the socialist period compared to the post-socialist period due to a stronger labor market attachment of women in Soviet Russia. In the post-Soviet Russia, both men and women should face stronger impediments for adult education participation but particularly women. First, the 'return' to a more traditional family formation patterns and their increased labor market absenteeism are likely to reduce females' incentives and necessity for adult education. At the same time, these traditional gender roles are said to reduce employers' support (investment) for adult education participation of female workers (Dieckhoff & Steiber, 2011) due to higher risk of losing returns to these investments. Second, reduced state support for formal childcare should even further lower female opportunities for time- and finance-consuming formal adult education (Kosyakova, 2014). Third, higher levels of overall labor market uncertainty and uncertainty regarding adult education returns may particularly affect women, because they are generally more risk averse than men (Borghans, Golsteyn, Heckman, & Meijers, 2009; Niederle & Vesterlund, 2007).

H9: The negative effect of the post-Soviet period on the probability of enrolling in upgrading and sidestepping should be stronger for women (compared with men).

6.4 Research design

My empirical investigation is based on linked data from the Russian Generations and Gender Survey (GGG) and the Education and Employment Survey for Russia (EES). For more information on both surveys, see Chapter 4.

6.4.1 Risk sample

For research on adult education participation, I restrict my data to “adults,” i.e., to those who are at risk of enrolling in adult education. Individuals enter the risk sample when they have completed initial education. This is assured by two conditions: First, completion of initial education is defined as having left formal education for at least 12 months (to allow for gaps in the educational career). Second, individuals are considered to still be in initial education if they are enrolled in educational qualification in the “normal age range.” I define the normal age range by using the upper values of the regular age at which the specific level of education is usually attained in Russia (see OECD, 2014) and allow for two additional years of studying. For example, normal enrollment age in university-level tertiary education is 18. Thus, individuals enrolled in this type of education are defined to still be in initial education if they are aged 20 and below. By this formulation, all previous spells of those enrolled in age-appropriate qualifications are also excluded.⁷¹ Finally, I consider individuals to be out of the risk sample if they are currently enrolled in adult education.⁷²

After these restrictions, the risk sample includes about 93% of EES respondents, thereby comprising of data from 3,738 women and 2,279 men.

6.4.2 Method

In contrast to previous studies on adult education attainment (e.g., Jenkins, Vignoles, Wolf, & Galindo-Rueda, 2003; Kosyakova, 2014) and participation (e.g., K. Kim et al., 2004; Wolbers, 2005), I examine enrollment in adult education. Studying enrollment in rather than attainment of adult education allows for a more precise investigation of the factors that lead to the transition to education in the later life course (H.-P. Blossfeld et al., 2014, p. 123).

⁷¹ For consistency reasons, I checked a median age of enrollment in different types of education in my data. The results indicate that it generally corresponds to the average national age, with exception of education below the upper-secondary level. The overestimated age of enrollment in this educational level is due to the EES design as educational trajectories were surveyed since each respondent turned 17. In Russia, 17 is the average age for finishing upper secondary school.

⁷² I put one month at risk for individuals who left adult education and enrolled in another adult education in the same month (there were 25 such cases).

I differentiate between two major types of adult education: *upgrading* and *sidestepping*. Upgrading is defined as being enrolled in education that is higher than that previously attained, whereas sidestepping is any other adult education that cannot be defined as upgrading. Table 6–1 provides an overview of how both types of adult education were defined (conditional on previous educational achievements) and of the respective number of enrollments in the sample. Overall, there are 1,369 enrollments in upgrading and 563 in sidestepping.

Several aspects of definition should be discussed in more detail. For individuals with a general type of education, such as low or upper-secondary (without vocational training), most of the educational activities result in the upgrading of the educational level, which may produce the ceiling effect discussed earlier. Full-time professional training is defined as an upgrading for individuals who had attained a maximum of low or upper-secondary education since they do not possess any vocational qualifications. Professional training and courses are not associated with changes in educational level, but they may lead to qualifications and certificates that are nationally recognized. Importantly, according to the ISCED (1997) classification, such professional training and courses can be classified as post-secondary non-tertiary education (ISCED 4, see Appendix A, Table A–1).

In the multivariate analyses, I rely on an event-history framework (H.-P. Blossfeld, Golsch, & Rohwer, 2007). Methods of event-history are particularly well suited for my study since they allow for explicitly considering the time-dependency of the process of enrollment in adult education, particularly how it unfolds over the life course. Moreover, these methods provide effective methods for exploring the effects of time-varying covariates (like occupational position or family formation). Third, by reconstructing populations of at-risk individuals, event-history methods can properly deal with right-censored observation, meaning that they also include those individuals who have not yet enrolled in adult education. Fourth, event-history methods are an appropriate tool for modeling adult education as a transition that can occur repeatedly in the life course.

To model adult-education enrollment appropriately, I apply a competing-risk approach. This is the best choice because (1) upgrading and sidestepping are mutually exclusive outcomes (2) that are also highly distinct in terms of opportunity costs and potential labor market outcomes (Li et al., 1998), and (3) individuals can move to any of these types of adult education from the origin state.

For modeling time-dependency, I opt for a piece-wise constant approach by splitting the time axis into seven intervals at the following monthly based split points: 12 (one year), 24 (two years), 48 (four years), 72 (six years), 120 (ten years), 180 (fifteen years), and 240 months and more (twenty years and more) since completing initial education.⁷³ Piece-wise constant models assume the baseline hazard to be constant within the intervals but not between intervals. As a result, this specification is particularly useful for approximating any time shape of the hazard while avoiding complex assumptions about the time-dependence of the process (H.-P. Blossfeld et al., 2007). From a theoretical point of view we would nevertheless expect the hazard to be non-monotonic by increasing and decreasing, as individuals should be more reluctant to return to education (and particularly time- and investment consuming formal adult education) shortly after initial education but also with increasing age or time since leaving initial education, due to the diminishing remaining time-horizon of life-course educational returns (G. S. Becker, 1962), potential competing adult roles (Elman & O’Rand, 2007), and higher reluctance of employers to invest in skills upgrading of older employees (Fouarge & Schils, 2009).

Consequently, I model enrollment in upgrading and sidestepping by employing *continuous time competing risk piece-wise constant exponential transition rate model with repeated events*. Alternative specifications of the functional form of the model were also tested. The comparison with various model specifications (see Appendix D) yield the conclusion that the piece-wise constant model has a superior model fit. Additionally, the piecewise constant model is more robust against misspecifications regarding the shape of the rate, albeit less

⁷³ More fine-grained splitting did not significantly improve the model fit and did not alter any substantial conclusions.

efficient (with higher standard errors).⁷⁴ The transition rate to adult education enrollment for upgrading ($k = 1$) and sidestepping ($k = 2$) is defined as follows:

$$r_k(t) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | T \geq t)}{t' - t}.$$

The probability that the time to enrollment lies within the infinitesimal interval (t, t') given that an individual “survived” up to t , standardized by the time interval (t, t') . Hence, the continuous rate can be interpreted as the spontaneous propensity to experience a transition to adult education. In the piece-wise constant approach, the durations are assumed to follow an exponential distribution. The log-hazard is parameterized by covariates as follows:

$$\ln r_k(t) = A\tau + X\beta + Z\delta,$$

where A is a vector of eight time dummies, X a vector of time-constant covariates, and Z is a vector of time-varying covariates. τ , β , and δ are vectors of parameters to be estimated from the data. Importantly, in the analyses of upgrading, individuals who have already attained post-graduate levels are excluded as there is no way to make an upward educational move.

6.4.3 Independent variables

As discussed, I address social inequality in terms of inequality of adult-educational opportunity. More specifically, I study access to adult education in terms of initial education and labor market attainment. *Initial educational level* is a time-constant variable measured at the time one has completed initial education. Labor market attainment is approached by a time-dependent indicator for having an *authoritative position* in the previous or current occupation. Authoritative position is a particularly good approximation of “more favorable occupational resources” as these positions are usually higher paid and are characterized by greater influence (e.g., Abendroth et al., 2013; Kraus & Yonay, 2000; Wright, Baxter, &

⁷⁴ More specifically, I tested a piecewise exponential model against the standard exponential, Gompertz, Weibul, log-logistic, and log-normal models. As a test, I exploited 1) the LR improvement test on model fit (Table D–1, Appendix D), 2) Akaike’s information criterion and Bayesian information criterion (Table D–2 and Table D–3, Appendix D), and 3) plots of pseudo-residuals based on the Cox & Snell approach (1968) (Figure D–1 and Figure D–2, Appendix D). It is important to mention that although piecewise exponential models do provide the best fit, these methods of testing are heuristics that could guide model selection (H.-P. Blossfeld et al., 2007), and theoretical considerations are always necessary.

Birkelund, 1995). I operationalize with the previous or current occupational position because most individuals enroll in formal adult education when they are not currently working.

Authoritative position includes positions such as (1) team-leader, (2) foreman, (3) employee who performs autonomously an important task or has a few subordinates, (4) leader with significant managerial authority with the right to take important decisions, (5) free-lancer hiring own employees, and (6) an individuals having own business and hiring own employees.⁷⁵ Authoritative position includes additionally occupations such as (1) senior manager in state administration, in a public or political organizations, and trade unions, and (2) top manager. I operationalize with the last or current occupational position, because most of the individuals enroll in formal adult education when they are not currently working. Additional tests with (a) only current occupational status, (b) exclusion of managerial occupations, and (c) control variable for self-employment yielded similar results. To address gender differences in adult education enrollment, I include an indicator for being a *female*.

To examine the issue of the societal and political transformation in Russia, I defined a time-dependent dummy for the *post-Soviet period* if the spell is related to the time between 1991 and 2004 (versus the Soviet period, i.e., the time between 1965 and 1990). Since the main structural, institutional, and also societal changes in Russia took place with the collapse of the Soviet Union, I consider this dichotomy to be an appropriate variable for studying the “regime change” effect.

In the multivariate models, I include further potential confounders, i.e., factors that may influence enrollment in adult education as well as initial educational and occupational achievements.

I account for *socio-economic origin* as measured by the highest educational attainment among parents.⁷⁶ Socio-economic origin predicts not only the attainment process in the

⁷⁵ The EES (2005) asked respondents about their position when they took up a job, and additionally their position in this job when they left if this job continued for twelve months or more. In my analyses, I consider any authoritative position, i.e., being this at the begin or/and at the end of the job. Since individual may enter into non-authoritative position and than move to authoritative one (for example after probability period), considering authoritative position only at the start of the job spell might underestimate such “promotions”.

⁷⁶ I use parental educational rather than occupational attainment due to the following reasons. Under the Soviet regime, there was no private property and wage differentiation was low. This restricted abilities of families to

educational career (e.g., Reimer & Pollak, 2009) but may also have a “direct” effect on the adult educational career (Elman & O’Rand, 2007), thereby confounding the relation between initial and adult education.

Several time-varying variables should additionally be considered. Competing family roles are expected to discourage enrollment in adult education (Dieckhoff & Steiber, 2011; Elman & O’Rand, 2007), and are likely to impede occupational attainment, particularly of women (see, e.g., Härkönen & Bihagen, 2011, p. 464). Thus, I account for (1) being *married* and (2) presence of *children* by capturing having children aged below 18 years old. Since both structural opportunities and a supply of educational institutions are likely to vary by place of residence in Russia, I include a binary indicator for *rural residence area* (see Kilpi-Jakonen et al., 2012). Positive experiences with education result in a growing appreciation of further education (Elman & O’Rand, 2007; Jenkins et al., 2003), meaning that participation in adult education might increase the propensity of enrolling in it again. Additionally, adult education is found to return better employment outcomes (e.g., Jenkins et al., 2003). Hence, I account for having the *experience of adult education*.

The next set of (time-varying) variables captures individuals’ attachment to and experience with the labor market. The *previous number of jobs* is used to address the propensity of changing jobs (Elman & O’Rand, 2007). Since adult education is a time-consuming process, it is likely for individuals to enroll in adult education when they are not currently working (Elman & O’Rand, 1998, 2007). I account for this by including an indicator for a *working* spell. Additionally, the motivation to enroll might be sensitive to unemployment: Unemployment experience may incline individuals to return to education to improve their labor market position (Hällsten, 2011; Stenberg, 2011). I capture this by *cumulative experience of unemployment* in months for the previous five years and its squared term (see

accumulate material assets for providing more educational opportunities for their children (Titma et al., 2003). In turn, since higher education was the main route to access higher occupational groups, higher-educated parents focused on education as “the fundamental asset to convey to their children” (Titma et al., 2003, p. 294). Hence, parental educational attainment may approximate parental cultural capital.

Hällsten, 2011 for similar approach). This variable may also function as additional proxy for occupational resources.⁷⁷

I further control for the *sector of economy* because requirements for initial educational attainment may vary by sector, and in some sectors (e.g., educational and health sphere), there is a higher need for constant skills upgrading and re-certification (Clarke & Metalina, 2000). Moreover, in the labor market restructuring process, many branches have been shrinking – particularly in production sector – which may incentivize individuals to re-train for a new profession (for indirect empirical evidence, see Berger et al., 2001). Expanding tertiary sector could also open up opportunities for adult education.

Importantly, since I consider occupational resources and the sector of economy in the current and previous job, I lack this information for those who have not yet entered their first job after completing initial education. To account for this, I include an indicator for whether an individual has already *entered the first job*. Finally, I control for approximate education (see Section 4.2.1), for residence in Moscow or St. Petersburg at the time of the GGS survey (see section 4.1), and for missing values in the multivariate models. For more information on variable construction, see Table 4–1 in Section 4.2.2.

6.5 Results

Before testing my hypotheses using multivariate analyses, I present a series of descriptive analyses providing first insights on enrollment in adult education in Russia. In the following, first the prevalence of upgrading and sidestepping in Soviet and post-Soviet Russia, and second the relationship between the transition to both adult education strategies and (1) initial educational, (2) occupational attainment, and (3) gender are presented and discussed.

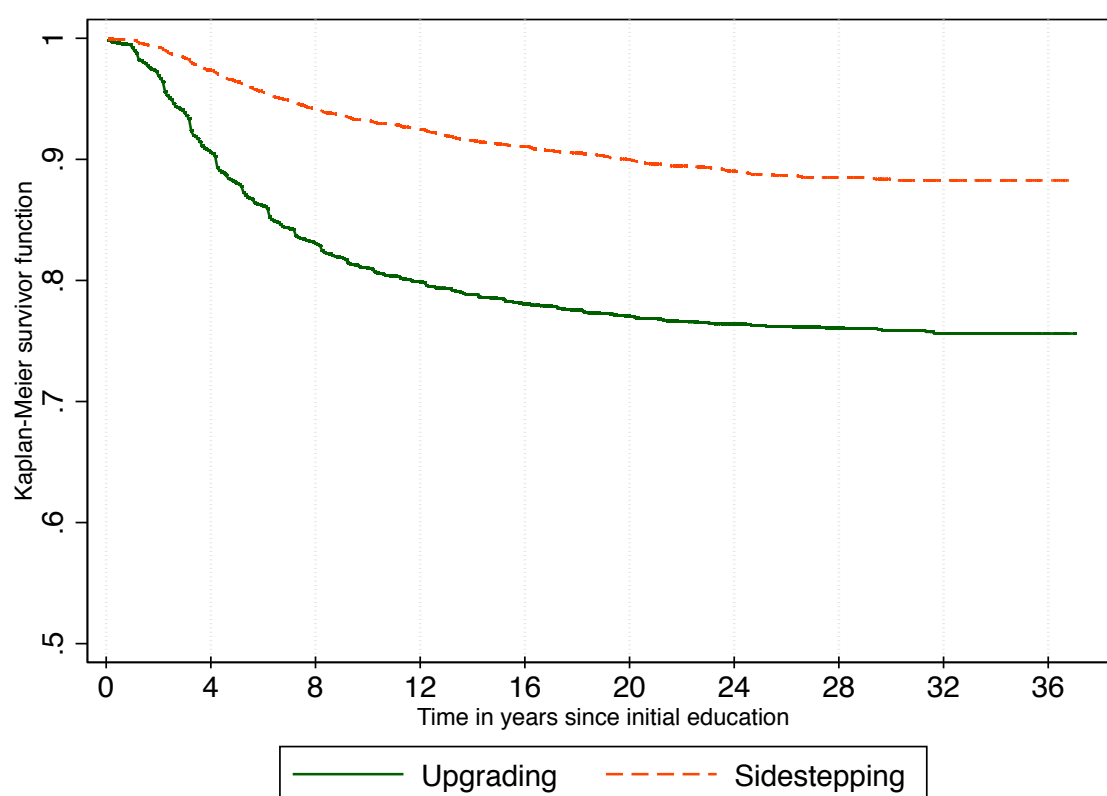
6.5.1 Descriptive results

Figure 6–1 displays Kaplan-Meier estimations for the enrollment in upgrading and sidestepping in Russia over the observation period. Overall, only few individuals enrolled in

⁷⁷ I do not examine social inequality in terms of unemployment experience, due the following two reasons. According to the Soviet ideology, there was no unemployment under the Soviet Union (though, for contra-evidence see Gregory & Collier, 1988; Moskoff, 1992). With the collapse of the Soviet Union it increased but never reached more than 13.3% (Gimpelson & Kapeliushnikov, 2013).

adult education within first two years after completing initial education. The results clearly reveal that upgrading is a much more used investment strategy compared with sidestepping, and individuals upgrade faster than they sidestep. This difference is not surprising since sidestepping is a rather “risky” investment (see discussion above). After duration of approximately five years, only about 4% of individuals enrolled in sidestepping, while 12% enrolled in upgrading. Within the next ten years, an additional 5% re-entered the educational system to proceed with sidestepping, and 8% re-entered to proceed with upgrading. However, 88% of individuals never actually participated in sidestepping, and 76% never upgraded.

Figure 6–1: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping



Note: Linked GGS (2004) and EES (2005) data; own calculations.

Table 6–2 offers a brief overview of the proportions of adult learners in Russia during the Soviet and post-Soviet periods and gives first hints of the impact of the regime change on incidences of adult education in Russia. Comparing both periods, the overall enrollment rates in the post-Soviet period are almost twice as low as during the Soviet period. Interestingly, while the proportion of upgraders decreased sharply, this is not the case for sidesteppers. The

lower value of previously accumulated human capital (owing to economic and labor market restructuring) probably resulted in a lower incidence of upgrading because many fewer individuals were motivated to build upon these “devaluated” skills (i.e., to upgrade). It should be noted that the proportion of enrollments in adult education in the post-Soviet period could be expected to be slightly higher if the observation period were as long as for the Soviet period (the observational window during the Soviet period was 25 years, whereas it was 14 years during the post-Soviet period).

Table 6–2: Proportion of adult learners in Russia overall and by period

	Analytical sample	Any adult education	Upgrading	Sidestepping
<i>Overall</i>				
In %	100%	26.21%	19.91%	8.03%
Individuals	6,016	1,577	1,198	483
<i>Soviet period</i>				
In %	100%	22.66%	17.94%	5.64%
Individuals	4,219	956	757	238
<i>Post-soviet period</i>				
In %	100%	11.70%	7.79%	4.42%
Individuals	6,016	704	469	266

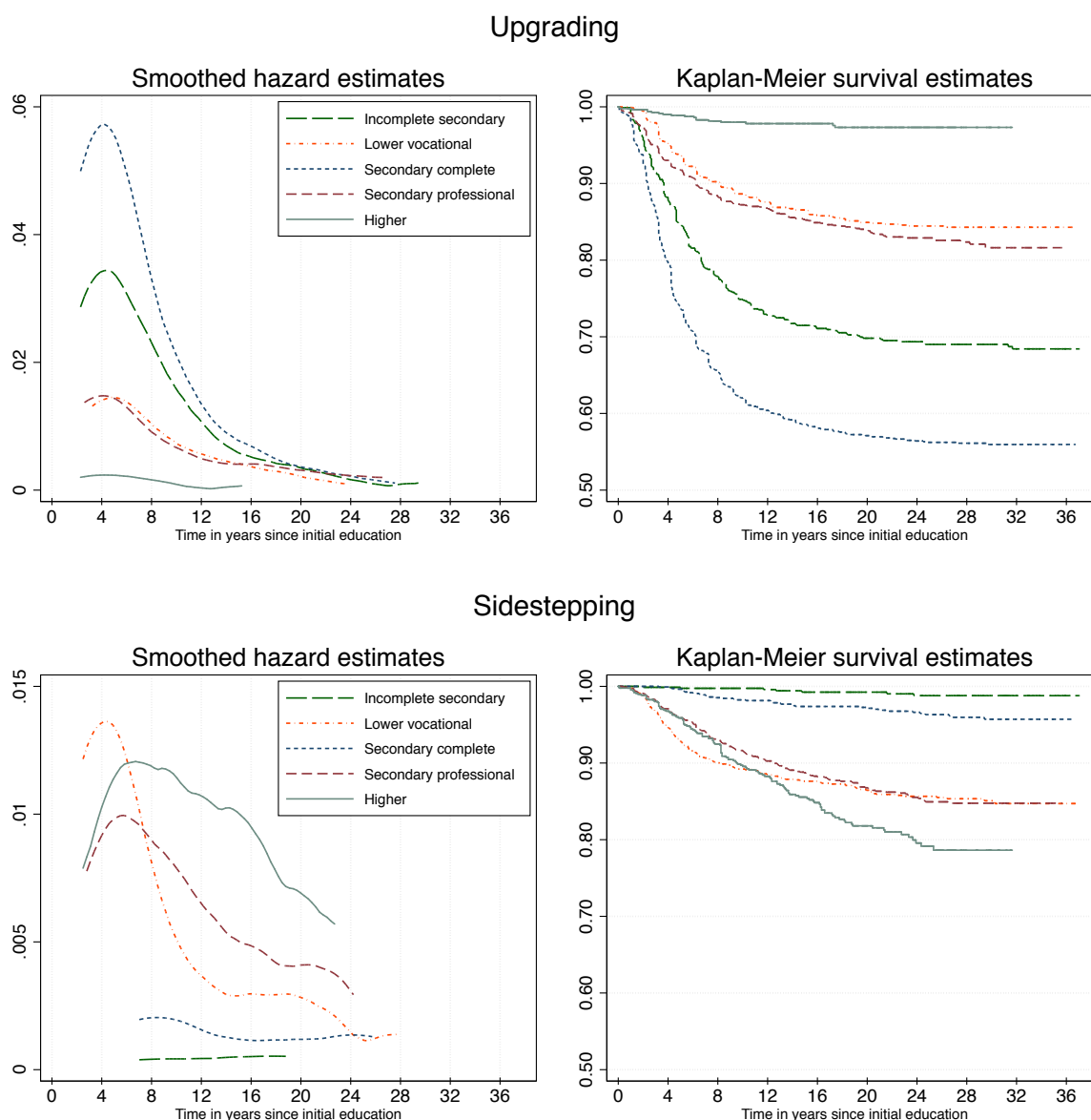
Note: Linked GGS (2004) and EES (2005) data; own calculations. Adult-education enrollment is considered as at least one-time enrollment per observation period. Thus, sample sizes and proportions across rows and columns do not add up in total.

Figure 6–2, Figure 6–3, and Figure 6–4 display Kaplan-Meier survival curves by initial educational level, by occupational position (in the current or previous job), and by gender and examine how previous educational and occupational attainments as well as gender are associated with enrollment in upgrading and sidestepping.

For upgraders, I find the lowest propensity for adult education for the individuals with higher professional education, followed by individuals with lower vocational and secondary professional education, and by individuals with incomplete secondary and secondary completed education (Figure 6–2). It seems, that particularly a lack of specialization pushes individuals to upgrade in the later life courses. For sidesteppers, there is low variation among individuals attained secondary professional and higher levels and among individuals attained incomplete and completed secondary in the first eight years. In turn, those attained lower vocational level tend to enroll faster compared to their more-educated counterparts and this trend holds for about 10 years since having left initial education. Nonetheless, after fifteen

years those initially higher-educated have slightly higher enrollment rates into sidestepping (with growing trend in the next years) than others.

Figure 6–2: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by initial educational level

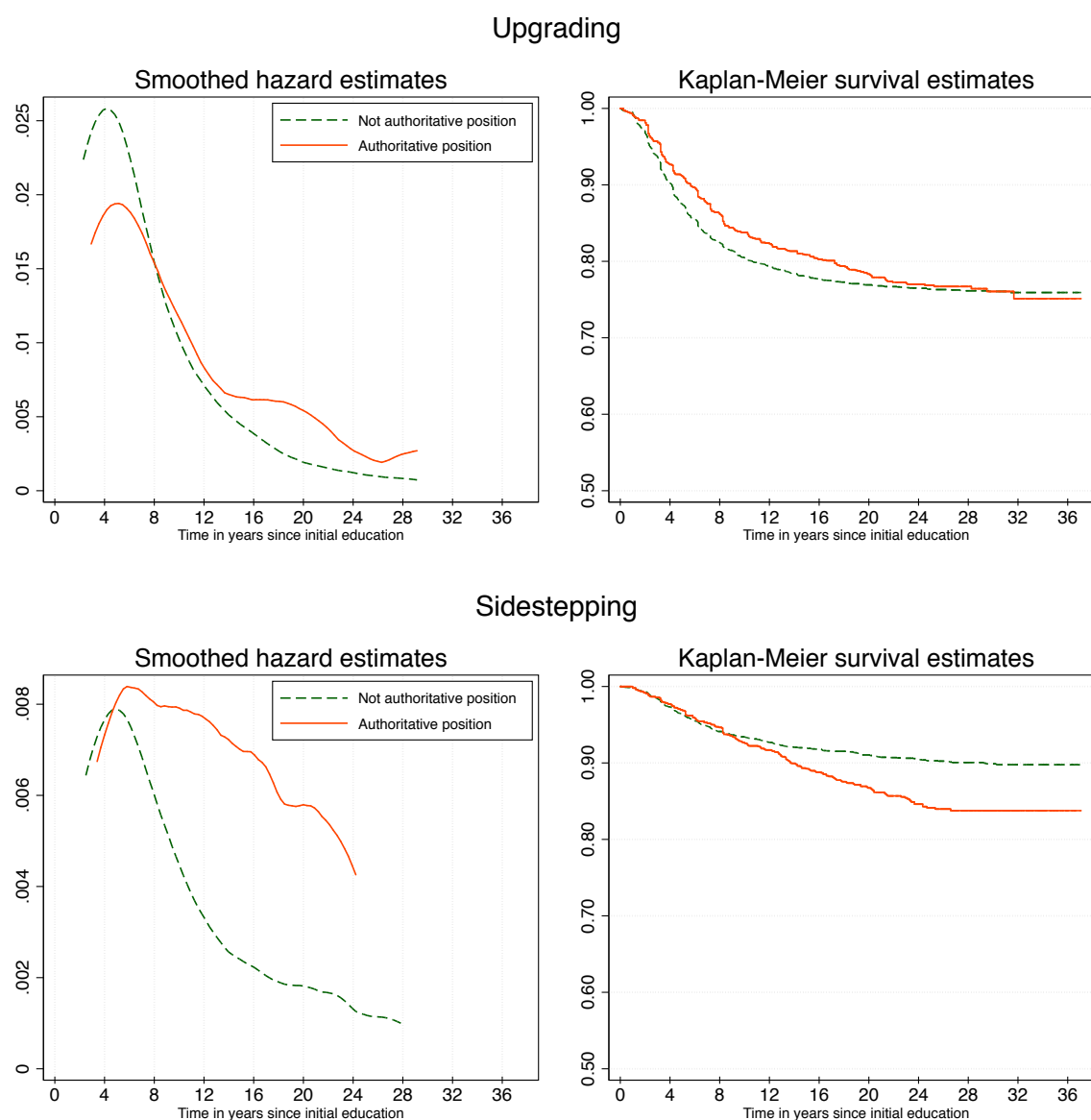


Note: Linked GGS (2004) and EES (2005) data; own calculations.

Turning to occupational resources of adult learners, Figure 6–3 illustrates that individuals having authoritative positions are not significantly different from those without one in their upgrading behavior in the first four years since having left initial education. Yet, after these period individuals in not authoritative positions tend to enroll in upgrading slightly faster compared to those in authoritative position. Among sidesteppers, the of impact of

occupational position emerges after about 10 years since having completed initial education: individuals in authoritative position become more likely to move into sidestepping than those in not authoritative positions.

Figure 6–3: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by occupational resources



Note: Linked GGS (2004) and EES (2005) data; own calculations.

Although the findings for occupational position contradict my expectations (Hypotheses *H4* and *H5*), it should be noted that access to authoritative position is strongly determined by initial educational level (e.g., see Chapter 5). Therefore, the descriptive results presented here might just reflect the patterns for those initially already higher-educated, and thus further

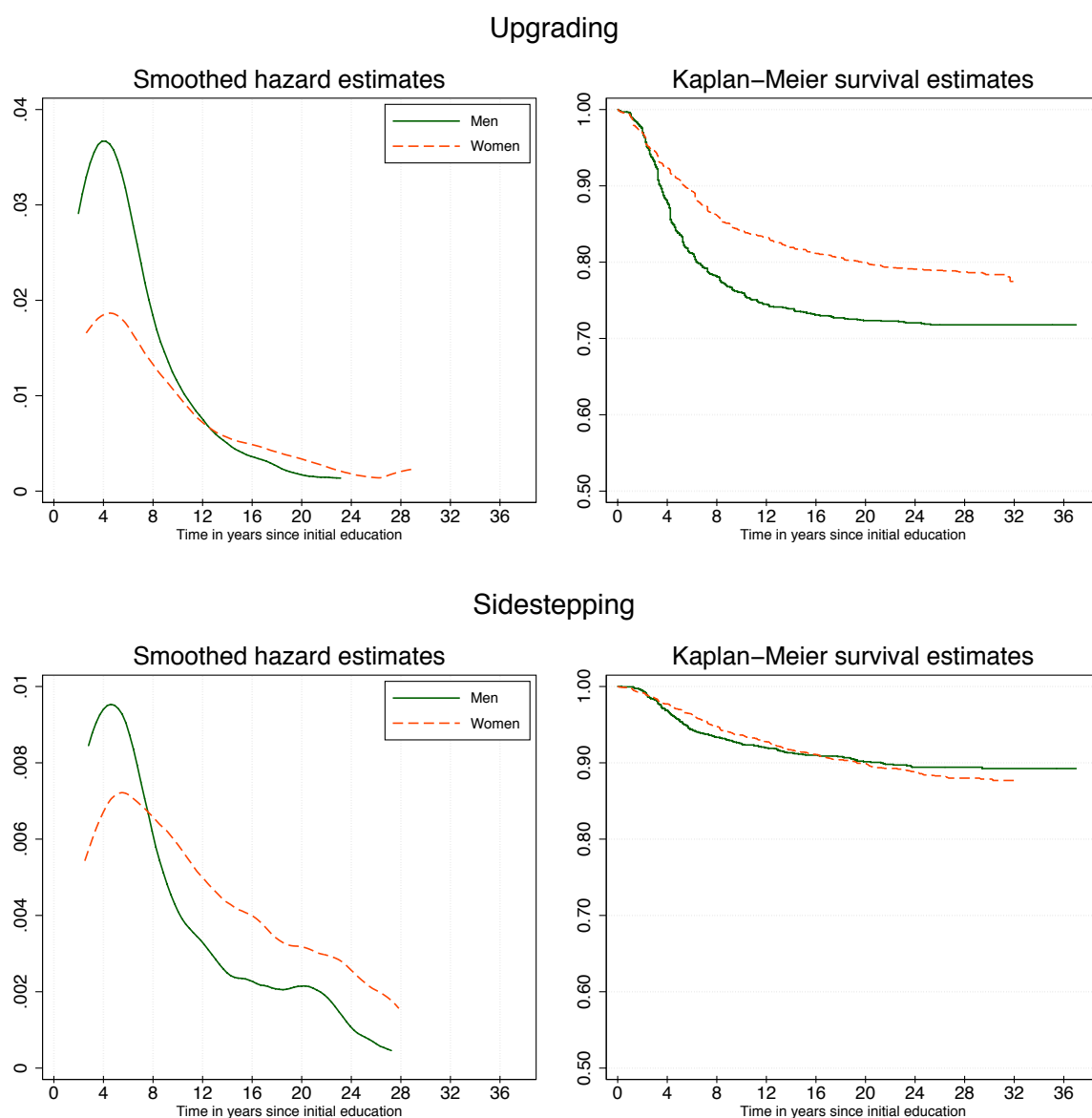
multivariate analyses are necessary. Furthermore, since authoritative position is a time-dependent variable, non-parametric descriptive methods such as Kaplan-Meier method are not suitable for examining their impact due to the failure to capture their time-dependency in an analytical way.

In regard to gender (Figure 6–4), men enroll faster in upgrading than women, while there are no such differences in regard to sidestepping. Since men are generally less educated than women, these patterns might result from a compositional effect. While the first observation underlines my expectations, the second one is contrast to them (Hypothesis *H8*).

6.5.2 Multivariate results

The results of the competing risk piece-wise constant exponential transition rate models that predict enrollment in upgrading and in sidestepping are presented in Table 6–3 and Table 6–4, respectively. I examine social inequality in access to adult education in Russia in the following steps. I begin with a model that includes the main explanatory variables, i.e., initial education, occupational position, and period effect (Model 1.1 for upgrading and Model 2.1 for sidestepping), as well as further model covariates and controls, in order to test Hypotheses *H1-H5*. Second, to study whether there is a variation in the initial educational effect over the regime change (Hypothesis *H6*), I add an interaction term between initial education and period (Model 1.2 for upgrading and Model 2.2 for sidestepping). Third, I examine whether the effect of the occupational positions changed over regime change (Hypothesis *H7*) by adding an interaction term between occupational position and period (Model 1.3 for upgrading and Model 2.3 for sidestepping). All results are presented for women and men both together and separately by gender.

Figure 6–4: Plot of survivor functions (product-limit estimation) for upgrading and sidestepping, by gender



Note: Linked GGS (2004) and EES (2005) data; own calculations.

6.5.2.1 Upgrading

Model 1.1 in Table 6–3 predicts that – *ceteris paribus* – those with secondary completed education are the mostly likely to upgrade, followed by those with incomplete secondary education, vocational education (lower vocational and secondary professional), and higher

educational levels.⁷⁸ Hence, I find support for hypotheses *H1*, stating that medium-educated adults should be more likely to upgrade. In line with hypothesis *H3*, the results for occupational position suggest that individuals with job authority are more likely to upgrade, net of other covariates. Furthermore, in line with hypothesis *H5b* and in contrast to hypothesis *H5a*, I find that on average, fewer individuals enroll in upgrading after the collapse of the Soviet Union, and particular among men. Regarding gender difference, the results show no gender differences in upgrading behavior among equally equipped men and women, which contradicts Hypothesis *H8*.

The interaction between initial education and the post-Soviet period (Model 2.1) increases the goodness of fit, and the likelihood-ratio test⁷⁹ is statistically significant (Models 1.1 versus 1.2: $p < 0.001$). Interaction effects turn out to be significant, though there is only limited variation in the effect of initial education over regime change. For those with secondary professional education, the regime change had positive impact on their propensity to enroll in adult education (coefficient: $-0.63 + 0.87 = 0.24$). In contrast, all other groups began to enroll less, particularly the lower-educated (although there is no significant variation of the period effect among these groups).⁸⁰ An additional examination of the group differences allows me to conclude that the regime change had a statistically significant negative impact only for initially medium- and lower-educated individuals (i.e., those below secondary-professional level), while no effect for the initially higher-educated (those above the secondary-professional level) can be observed.⁸¹ Although these results do not precisely support hypothesis *H6*, the patterns seem to be in line with expectations of a “weaker negative effect” for the initially higher-educated (which, in my case, yields no negative effect). Moreover, the distance between those with complete secondary education and those with secondary professional education appears to reduce after the collapse of the Soviet Union. These

⁷⁸ According to the Wald Test, differences between those with lower vocational education and those with secondary professional education are not statistically significant ($p = 0.756$).

⁷⁹ The null hypothesis (that the additional interaction parameters are simultaneously zero) is tested.

⁸⁰ I checked this by changing the reference category of educational level.

⁸¹ Wald Test of the post-Soviet period effect for those with incomplete secondary education $p < 0.001$, lower vocational education $p < 0.05$, secondary completed education $p < 0.001$, secondary professional education $p = 0.064$, and higher education $p = 0.192$.

findings factually mean that the initially medium-educated “lost their advantage” with regard to an access to upgrading. Models stratified by gender follow generally the same patterns as model with both genders.

An interaction between occupational position and the post-Soviet period (Model 1.3) seems not to increase the goodness of model fit at the conventional levels of statistical significance (likelihood-ratio test Model 1.1 versus Model 1.3: $p=0.087$). Still, there is some variation in the post-Soviet period effect. Although enrollment rates in upgrading decreased after the regime change, among those in authoritative positions, the negative effect of the post-Soviet period is weaker (coefficient: $-0.41+0.24=-0.17$, Wald Test: $p=0.192$) than among those in non-authoritative positions (coefficient: -0.41 ; Wald Test: $p<0.001$). However, the post-Soviet period effect is not statistically significant for individuals in authoritative positions, meaning that they were able to retain their advantages after the regime change, whereas individuals in non-authoritative positions lost even more. Although not precisely, these results are in line with Hypothesis *H7*. Models stratified by gender predict the same patterns for women. For men, Hypothesis *H7* is supported, because I find that also those in authoritative positions faced negative consequences of the Soviet Union collapse (Wald Test: $p<0.05$), though these negative effect was less pronounced then for those in non-authoritative positions (Wald Test: $p<0.001$).

The interaction between gender and the post-Soviet period (Model 1.4) increases the goodness of fit, and the likelihood-ratio test is statistically significant (Models 1.1 versus 1.4: $p<0.001$). The results imply that the collapse of the Soviet Union appears to disadvantage only men in chances of upgrading (coefficient: -0.67), whereas for women there was no statistically significant change (coefficient: $-0.67+0.56=-0.11$, Wald Test: $p=0.194$). Both findings contradict Hypothesis *H9*. Moreover, the gender gap in propensity to upgrade that was to the female disadvantage under the Soviet regime (coefficient: -0.29 , Wald Test: $p<0.001$), turned around in favor of women during the post-Soviet period coefficient: $-0.29+0.56=0.27$, Wald Test: $p<0.001$).

Table 6–3: Piece-wise constant exponential model on the entry into upgrading

	Model 1.1			Model 1.2			Model 1.3			Model 1.4	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Women
<i>Post-Soviet period (ref. Soviet period)</i>	-0.36***	-0.60***	-0.18*	-0.63***	-0.75***	-0.48*	-0.41***	-0.65***	-0.24*	-0.67***	
<i>Initial educational level (ref. Incomplete secondary)</i>											
Lower vocational	-0.69***	-0.83***	-0.54**	-0.79***	-1.03***	-0.53*	-0.69***	-0.83***	-0.54**	-0.70***	
Secondary completed	0.44***	0.39*	0.52**	0.39**	0.38*	0.43*	0.44***	0.38*	0.52**	0.44***	
Secondary professional	-0.66***	-0.66***	-0.63***	-1.07***	-0.92***	-1.04***	-0.66***	-0.65***	-0.63***	-0.68***	
Higher	-3.01***	-2.63***	-3.28***	-3.01***	-2.79***	-3.11***	-3.03***	-2.64***	-3.31***	-3.05***	
Post-Soviet period x Lower vocational				0.26	0.53*	-0.02					
Post-Soviet period x Secondary completed				0.11	-0.04	0.22					
Post-Soviet period x Secondary professional				0.87***	0.59	0.84***					
Post-Soviet period x Higher				0.01	0.32	-0.33					
<i>Occupational position (ref. non-authoritative position)</i>											
Authoritative position	0.72***	0.67***	0.78***	0.74***	0.69***	0.80***	0.62***	0.57***	0.66***	0.73***	
Post-Soviet period x Authoritative position							0.24	0.24	0.29		
<i>Female (ref. Male)</i>	-0.08			-0.08			-0.08			-0.29***	
Post-Soviet period x Female										0.56***	
<i>(Further variables are omitted; see Table D–1, Appendix D)</i>											
Number of observations	101,544	39,079	62,465	101,544	39,079	62,465	101,544	39,079	62,465	8,724	
Number of subjects	5,998	2,274	3,724	5,998	2,274	3,724	5,998	2,274	3,724	9,067	
Number of failures	1,369	626	743	1,369	626	743	1,369	626	743	101,544	
Model fit											
Log Likelihood	-4,338	-1,796	-2,488	-4,323	-1,791	-2,479	-4,336	-1,795	-2,487	-4,326	
χ^2	53,961	22,081	31,298	53,822	22,055	31,186	53,945	22,074	31,282	53,850	
Degrees of freedom	35	34	34	39	38	38	36	35	35	36	
AIC	8,746	3,659	5,045	8,724	3,658	5,033	8,745	3,660	5,044	8,724	
BIC	9,079	3,951	5,352	9,096	3,983	5,377	9,088	3,960	5,361	9,067	

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Continuous time piece-wise constant exponential transition rate model with repeated events; event = entry into upgrading; individuals with post-graduate education level are excluded; logit coefficients reported. Variables for occupational position refer to the current or last job.

6.5.2.2 Sidestepping

Before discussing the results for sidestepping (Table 6–4), it is important to mention that sidestepping is much rarer than upgrading (563 events of sidestepping versus 1,369 events of upgrading), especially for men (200 events). Therefore, in some cases, the lower statistical power of the predictor variables might be due to a small sample size (Allison, 2012).

In contrast to upgraders, individuals with a higher educational level tend to sidestep more often (Model 2.1).⁸² However, these patterns are only pronounced for women, whereas for men, there is no statistical difference between different educational groups.⁸³ Consequently, the Hypothesis *H2*, predicting higher participation in sidestepping for initially higher-educated individuals, is supported for women but not for men. The results for occupational position predict no average effect of having an authoritative job on the likelihood of enrolling in sidestepping. However, in the stratified models by gender, men in authoritative (versus non-authoritative) positions seem to sidestep more often, while for women, the effect is the opposite and is not statistically significant. Consequently, Hypothesis *H4*, stating that individuals from more favorable occupational groups should be less likely to enroll in sidestepping, found no support. The post-Soviet period has a negative impact on the chances of sidestepping. This result is only statistically significant for men, which supports Hypothesis *H5b*. For women, the post-Soviet period effect is positive (which would be in line with Hypothesis *H5a*), albeit not statistically significant. According to the model, men and women do not differ from each other in terms of their propensity for sidestepping, other things being equal. Hence, Hypothesis *H8* is not supported.

⁸² Wald Test of differences between those with secondary professional education and higher $p < 0.05$.

⁸³ For men, Wald Test of differences between those with lower vocational education and secondary professional education $p = 0.347$, between those with lower vocational education and higher education $p = 0.646$, and between those with secondary professional education and higher education $p = 0.819$.

Table 6–4: Piece-wise constant exponential model on the entry into sidestepping

	Model 2.1			Model 2.2			Model 2.3			Model 2.4	
	All	Men	Women	All	Men	Women	All	Men	Women	All	Women
<i>Post-Soviet period (ref. Soviet period)</i>	-0.16	-0.58***	0.1	-1.87	-1.4	-13.93	-0.37**	-0.90***	-0.05	-0.70***	
<i>Initial educational level (ref. Incomplete secondary)</i>											
Lower vocational	3.20***	2.95***	3.62***	2.91***	2.85***	3.04***	3.21***	2.96***	3.64***	3.21***	
Secondary completed	1.52***	0.89	2.24**	0.7	0.31	1.19	1.54***	0.89	2.27**	1.53***	
Secondary professional	3.28***	2.77***	3.91***	2.64***	2.39***	3.12***	3.31***	2.80***	3.94***	3.30***	
Higher	3.55***	2.83***	4.22***	2.74***	2.19**	3.30***	3.57***	2.84***	4.24***	3.55***	
Post-Soviet period x Lower vocational				1.19	0.39	13.68					
Post-Soviet period x Secondary completed				2.25*	1.58	14.5					
Post-Soviet period x Secondary professional				1.90	1.07	14.06					
Post-Soviet period x Higher				2.13	1.46	14.26					
<i>Occupational position (ref. non-authoritative position)</i>											
Authoritative position	0.08	0.41*	-0.06	0.10	0.43*	-0.05	-0.35*	-0.11	-0.40	0.09	
Post-Soviet period x Authoritative position							0.73***	1.03**	0.54*		
<i>Female (ref. Male)</i>	-0.07			-0.07			-0.07			-0.51***	
Post-Soviet period x Female										0.85***	
<i>(Further variables are omitted; see Table D–2, Appendix D)</i>											
Number of observations	101,921	39,162	62,759	101,921	39,162	62,759	101,921	39,162	62,759	101,921	
Number of subjects	6,017	2,279	3,738	6,017	2,279	3,738	6,017	2,279	3,738	6,017	
Number of failures	563	200	363	563	200	363	563	200	363	563	
Model fit											
Log Likelihood	-2,147	-736	-1,367	-2,134	-731	-1,363	-2,140	-731	-1,365	-2,136	
χ^2	29,494	9,794	19,156	29,322	9,734	19,094	29,401	9,730	19,124	29,358	
Degrees of freedom	35	34	34	39	38	38	36	35	35	36	
AIC	4,364	1,540	2,802	4,346	1,537	2,802	4,351	1,532	2,799	4,344	
BIC	4,697	1,831	3,110	4,717	1,863	3,146	4,694	1,832	3,116	4,687	

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Continuous time piece-wise constant exponential transition rate model with repeated events; event = entry into sidestepping; logit coefficients reported. Variables for occupational position refer to the current or last job.

Interaction between the initial educational level and the post-Soviet period (Model 2.2) improves the model significantly (likelihood-ratio test Model 2.1 versus Model 2.2: $p < 0.001$) and implies that the post-Soviet period had negative consequences in terms of access to sidestepping for those with an initial educational level of incomplete secondary education (coefficient: -1.87), lower vocational education (coefficient: $-1.87 + 1.19 = -0.68$). In turn, the regime change slightly increased the chances for those with secondary completed education (coefficient: $-1.87 + 2.25 = 0.38$), secondary professional education (coefficient: $-1.87 + 1.90 = 0.03$), and higher education (coefficient: $-1.87 + 2.13 = 0.26$). Nonetheless, additional tests demonstrate that the regime change only had a statistically significant impact for those with lower vocational education.⁸⁴ Importantly, there were only seven individuals with incomplete secondary education who enrolled in sidestepping. Therefore, since the negative effect of the regime change was the strongest for this group, lack of statistical significance might be due to the lower sample size (in failure). Gender-specific models imply that these findings are valid for women. For men, the results follow the same patterns, though group comparison imply no statistically significant differences with regard to a period effect. Again, this is likely to be a result of lower sample sizes. My findings are generally in line with Hypothesis *H6* (particularly for women) as I do not find a negative effect of the regime change for the initially higher-educated, but I do find it for the initially lower-educated.

The interaction between the occupational position and the period (likelihood-ratio test Model 2.1 versus Model 2.3: $p < 0.001$) suggests a positive post-Soviet period effect for individuals in authoritative positions (Model 2.3). Closer examination of the interaction effect yields the following picture: Before the collapse the Soviet regime, individuals in authoritative positions were less likely to enroll in sidestepping compared with individuals in non-authoritative positions (coefficient: -0.35 , Wald test: $p < 0.05$). After the collapse, I find turnabout patterns (coefficient: $-0.35 + 0.73 = 0.38$, Wald test: $p < 0.01$). As a result, the chances of sidestepping reduced for individuals in non-authoritative positions after the regime change (coefficient: -0.37 , Wald test: $p < 0.01$). Conversely, for those in authoritative positions, the regime change had a positive effect (coefficient: $-0.37 + 0.73 = 0.36$, Wald test: $p < 0.05$). This

⁸⁴ Wald Test of the post-Soviet period effect for those with incomplete secondary education $p = 0.083$, lower vocational education $p < 0.001$, secondary completed education $p = 0.259$, secondary professional education $p = 0.866$, and with higher education $p = 0.189$.

means that the gap between the advantaged and disadvantaged has been reversing since the regime change and benefiting those already advantaged (this turnabout in effects also explain an absence of the total effect of the regime change in Model 2.1). These results only partly support Hypothesis *H7* as I find not a weaker negative effect but a positive effect of the post-Soviet period for those in more favorable positions. Despite a somewhat different interpretation, the results for men and women similarly predict rather an exacerbation effect of the regime change on inequality of adult-educational opportunity due to occupational positions.⁸⁵

Finally, interacting gender and period (Model 2.4) improves model fit (likelihood-ratio test Model 2.1 versus Model 2.4: $p < 0.001$) and indicates similar patterns as I found for upgraders (Model 1.4): post-Soviet Union collapse reduced chances for men to sidestep (coefficient: -0.70) but not for women (coefficient: $-0.70 + 0.85 = 0.15$, Wald Test: $p = 0.236$), thereby reversing the initial gender inequalities to the female disadvantage.⁸⁶ Hence, Hypotheses *H9* lacks empirical support.

6.6 Discussion

Life-course research argues that initial advantages in educational careers are likely to be reproduced and amplified in later educational and labor market opportunities (“cumulative advantage effect”, DiPrete & Eirich, 2006; “Matthew Effect”, Merton, 1968), resulting in a steadily growing gap between initially advantaged and disadvantaged groups. In this regard,

⁸⁵ For men, I find no statistically significant gap in regard to authoritative position during the Soviet period (Wald Test: $p = 0.697$), whereas men in authoritative (versus non-authoritative) positions are more likely to enroll in sidestepping during the post-Soviet period (Wald Test: $p < 0.001$). Additionally, the post-Soviet effect has only statistically significant negative effect for men in non-authoritative positions (Wald Test: $p < 0.001$; for men in authoritative positions, $p = 0.641$). This means that the regime change worsened chances of the occupationally disadvantaged men. For women, although the gaps due occupational positions seem not to reach conventional levels of statistical significance (Wald Test: during the Soviet period $p = 0.060$, during the post-Soviet period $p = 0.376$), the post-Soviet effect has statistically significant positive effect for women in authoritative positions (Wald Test: $p < 0.05$; for women in non-authoritative positions, $p = 0.705$). This means that the gap to the advantage of occupationally advantaged women emerged with the regime change.

⁸⁶ During the Soviet period, women were less likely to sidestep than men (coefficient: -0.51 , Wald Test: $p < 0.001$), whereas they became more likely to sidestep after the collapse of the Soviet Union ($-0.51 + 0.85 = 0.34$, Wald Test: $p < 0.05$).

this study explicitly addresses inequality of adult-educational opportunity for those initially advantaged and disadvantaged in socialist and post-socialist Russia. I thereby argue that initial educational achievement and the attained occupational position might be strong motivating factors in addition to also being constraining factors (in terms of resources and opportunity costs) for enrollment in two distinct strategies of adult education, namely upgrading (defined as achieving a higher formal level of education) and sidestepping (defined as achieving an identical or lower formal level of education). Using techniques of event-history analysis on linked data from the GGS and EES, I investigated (1) how previously accumulated initial educational levels and occupational resources may incentivize or hinder adults from enrolling in upgrading or sidestepping, (2) how the regime change in Russia has shaped these patterns, and (3) how selective participation in adult education shapes inequality of adult-educational opportunity. Special attention was drawn to gendered patterns in adult education enrollment. In the following section, I briefly highlight the main findings for adult learners as well as these findings' implication for social-inequality patterns in Russia.

I anticipated that adult upgraders would consist of individuals who are initially educationally disadvantaged and who are advantaged in the labor market, while adult sidesteppers would be those who are initially educationally advantaged and who are disadvantaged in the labor market. I additionally assumed gender inequalities disfavoring women in both types of adult education. In line with these anticipations, the empirical results have demonstrated that the initially medium-educated as well as those in more favorable occupational positions are more likely to upgrade. Moreover, I found initially higher-educated individuals more likely to sidestep, even if this conclusion holds true only for women and not for men.⁸⁷ However, since the sample size for men was smaller than for women, one should be cautious when interpreting the non-significant effect of male initial education as being zero. Regarding the labor market (dis-)advantage, I found men in more (versus less) favorable occupational

⁸⁷ Analyses of the first significant job in Russia in the Chapter 5 might support this claim, as I find that particularly among higher-educated there is a gender gap in the access to authoritative positions. Probably, fewer chances for higher-educated women to match their skills to the better labor market positions, motivates them to seek retraining over educational sidestep in order to improve their labor market outcomes. The literature further hints that the most-educated and the lowest-educated female (versus male) graduates face higher risks of labor market exclusion in Russia (see Bühler & Konietzka, 2011; Denisova, 2002).

positions to be more likely to sidestep, whereas for women, there are no such differences.⁸⁸ Sidestepping – as a “risky” investment strategy – may well be less dependent on occupational resources, instead depending on individuals’ own motivation. Accordingly, the results for sidestepping partly contrast with my expectations. The expectations on gender have found no support in my study: men and women with similar characteristics have equal opportunities for both upgrading and sidestepping. Altogether, this means that it is rather individual preferences and needs, and structural factors that push individuals to return to education in the later life course.⁸⁹

What do these findings mean for social inequality in Russia? My analyses have revealed that stratified patterns of participation in adult education might exert both equalization and exacerbation effects on inequality adult-educational of opportunity. Higher enrollment rates in upgrading for previously educationally disadvantaged individuals suggest an equalizing pattern, while the results for occupational position suggest an exacerbation effect of upgrading. The greater access of initially educationally advantaged women to sidestepping suggests an exacerbation effect, yet the results for men advocate more equalized patterns. The lack of a gap between those previously occupationally advantaged and disadvantaged women in sidestepping implies that this type of adult education does not pronounce existing inequality. In turn, a greater access to sidestepping of previously advantaged men speaks in support of an exacerbation effects.

Although I had contrasting expectations for the regime change on the incidences of adult education, the regime change was argued to result in fewer opportunities for adult education particularly for those previously disadvantaged either educationally or in the labor market. First, I found that a negative regime change effect on overall level of opportunity and particularly among men. Second, initially educationally disadvantaged individuals (i.e., the lower- and medium-educated) lose their advantage in access to upgrading and face greater disadvantages in access to sidestepping in post-Soviet Russia (statistically significant only for women). Third, I found that those initially disadvantaged in the labor market (i.e., those in

⁸⁸ Notably, men are generally more risk-seeking than women (Borghans et al., 2009; Niederle & Vesterlund, 2007), which may support my speculation.

⁸⁹ Step-wise inclusion of variables implied that family constrains (being married and having children) fully explain the gender inequalities to the female disadvantage in probability to enroll in upgrading.

less favorable occupational positions) have lost their “equal” positions in access to upgrading and their advantageous positions in regard to sidestepping since the regime change in Russia. Both patterns are in line with my expectations. On the basis of this evidence, it seems fair to suggest that the regime change has clearly contributed to inequality of adult-educational opportunity and hence has strengthened the exacerbation effect of adult education on social inequality.

Notably, I find that women (compared to men) having faced disadvantages in opportunities for upgrading and sidestepping under the Soviet Union, whereas this has been reversed in the post-Soviet period in Russia (this explains the absence of the overall gender effects). The post-Soviet demise therefore has changed opportunity structures between men and women in a way that women became more likely to enroll in upgrading than men. This change was a result of worsening opportunities for men and not of increasing opportunities for women, which might not amuse policy-makers. Moreover, considering the abrupt social and economic change, masculinization of economy, growth of corruption and importance of social networks particularly in the first transition decade (see Sections 2.6, 3.4, 3.5, and 3.8 for discussion), the gender-specific adult education enrollment patterns might be a result of different labor market instruments used by men and women to succeed in a liberalizing and faster changing labor market. Lack of state control, high competition and an explosive growth of entrepreneurship pushed men relying on informal and often dangerous channels (to which men have better access, see e.g. Volkov, 2002), while women had to take more formalized channels via educational adjustments.⁹⁰

Returning to the “Matthew Effect” (Merton, 1968) or “cumulative advantaged effect” (DiPrete & Eirich, 2006), the Russian case can be summarized as follows: Higher social origin was and remains a crucial factor for higher educational attainment by adulthood in both Soviet and post-Soviet Russia (e.g., Gerber & Hout, 1995; Gerber, 2000a). Higher educational attainment, in turn, can give a competitive advantage upon labor market entry (e.g., Gerber, 2003; see also Chapter 5) and over the life course (Akhmedjonov, 2011; see also Chapter 7) but may also confer a propitious position in access to adult education, particularly in the Russian liberalized market economy, as my analyses have shown.

⁹⁰ Tentative support for this argument comes from the study by Gerber & Mayorova (2010) who demonstrated that Russia women are less likely to find a job via social networks.

Although I found evidence that selective participation adult education may promote intra-generational equality of adult-educational opportunity in the case of upgrading, it seems that these adult learners come from higher social origins (see Table D–1, Appendix D), which may contribute to intergenerational inequality of adult-educational opportunity.

Nevertheless, my study has several limitations that should guide further research. First, the data and sample size do not allow for a more fine-grained measurement of adult education. For instance, in terms of upgrading, it might be important to differentiate between strong and low upgrading. In terms of sidestepping, a further separation of downgrading from sidestepping – participation in adult education that is of a lower level – could be another relevant distinction for social inequality. Second, characteristics like field of study in initial and adult education could improve the measurement of the quality of adult education. Third, my results might underestimate inequality of adult-educational opportunity since I only considered formal adult education.⁹¹ Fourth, although my data is from 2005 and therefore not too outdated, it can be expected that the social and economic relevance of adult education has increased in Russia since 2005 due to the recent reforms in social and educational policies (see Khokhlova et al., 2013). Some recent studies have attempted to tackle related questions for the most recent decade in Russia (Kilpi-Jakonen et al., 2012; Kosyakova et al., 2016; Kosyakova, 2014). Finally, the scope of this chapter was limited to participation in adult education and did not encompass returns to adult education, an issue that will be dealt in the next chapter.

⁹¹ Non-formal and informal education comprise important forms of adult education, as well. However, a large amount of empirical literature on non-formal adult education has shown that this type of adult education leads to an exacerbation of social inequalities (e.g., Albert, García-Serrano, & Hernanz, 2010; Bassanini et al., 2005; Bills, 2005; Brunello, 2001; Cai, 2011; Desjardins & Rubenson, 2011; Dieckhoff et al., 2007; Dieckhoff & Steiber, 2012; Hout & DiPrete, 2006; Kosyakova, 2014; Pallas, 2004; Schils & Fouarge, 2008).

Chapter 7

Inequality in returns to adult education and the regime change⁹²

7.1 Introduction

Economic theories posit that investments in education enhance productivity and consequently employment outcomes (G. S. Becker, 1964). Following this premise, policies emphasize the importance of human capital accumulation throughout individuals' entire life course, often called "lifelong learning" (European Commission, 1995). In this regard, by improving employment outcomes and social inclusion, education and training are believed to benefit individuals not only in earlier but also in later stages. Moreover, formal adult education could enable initially educationally disadvantaged groups to catch up or to correct initially poor decisions (Kilpi-Jakonen et al., 2012). From a stratification point of view, one can argue that adult education may contribute to mitigating social distances and inequalities that emerged during schooling in the earlier life course. Furthermore, in a globalizing world calling for rapid skills adjustment and knowledge acquisition, adult education is becoming "the Solution" to supporting "a rapid transition to a knowledge-based economy" (Kristensson Ugglå, 2008, p. 213). Correspondingly, adult education as an engine for economic development and welfare also benefits society in a broader sense (see also Jenkins et al., 2003).

Nonetheless, empirical evidence regarding returns to adult education is ambiguous. While several studies have shown that adult learners enjoy improved employment outcomes (Jenkins et al., 2003; Tuijnman, Chinapah, & Fägerlind, 1988), others have found no impact of adult education (Blanden, Buscha, Sturgis, & Urwin, 2012; Hällsten, 2012; Stenberg, 2011) or even a labor market disadvantage for mature compared with "on time" graduates

⁹² This chapter is a modified and extended version of Kosyakova, Y. (forthcoming). Cumulation or compensation? Adult education, labour market returns, and social inequalities in Soviet and Post-Soviet Russia. Under peer-review in *Advances in Life Course Research*.

(Egerton, 2001; Elman & O’Rand, 2004; Holmlund, Liu, & Nordström Skans, 2007). Jenkins et al. (2003) established that the least qualified may indeed benefit from formal adult education, which suggests its equalizing effect on inequalities in employment outcomes. Contrarily, Kilpi-Jakonen et al. (2012 for Russia and the UK) demonstrated that those who are already advantaged are also the ones who benefit most from adult education, which instead alludes to an exacerbation effect on social inequalities.

Remarkably, most empirical research on formal adult education has been conducted in western countries. With several exceptions (see Blossfeld, Kilpi-Jakonen, Vilhena, & Buchholz, 2014; Kilpi-Jakonen et al., 2012), existing sociological literature is silent on adult education in transitional societies such as Russia.⁹³ Even less is known about returns to adult education during the socialist period and how these returns evolved after the regime change.⁹⁴ This gap is surprising because the core idea of education changed with the collapse of the Soviet Union. Under the Soviet regime, the (adult) educational system was very specific: Centralized and serving the planning economists, it lacked efficient market structures. As an aftermath of the collapse, previously accumulated human capital was almost instantly devaluated, economy and labor market structures were vastly reorganized (Sabirianova, 2002), and the inequality between social groups increased (e.g., Gerber & Hout, 2004). As a result, adult education should have gained in significance to cope with the dramatic changes after the collapse. However, the educational sector received less attention from the government, and the once tight link to the labor market dissolved (Gerber, 2003), resulting in higher labor market risks for the graduates (Bühler & Konietzka, 2011).

⁹³ Available studies for Russia have focused primarily on non-formal adult education in the post-Soviet period and have done so principally from an economic perspective (e.g., Berger et al., 2001; Clarke & Metalina, 2000; Didenko, Dorofeeva, & Kljucharev, 2011; Popova, 2008).

⁹⁴ However, while Ivančič (2000) provides some empirical evidence on adult-education returns during and after the socialist period in Slovenia, she does not directly examine their variation over regime changes. Also the study looks only at educational improvement, while acquiring additional qualification at the same or lower level was neglected.

The aim of this study is (1) to analyze whether participation in formal adult education has a substantial effect on employment outcomes in Soviet and post-Soviet Russia.⁹⁵ Extending previous research, (2) I examine returns to two types of adult education: upgrading and sidestepping. Upgraders obtain qualification higher than initial qualification, whereas sidesteppers obtain qualification lower than or at the same level as initial qualification. This differentiation is crucial because upgrading and sidestepping both common forms of adult education are likely to differ in their signaling function on the labor market. The signal of upgrading should be easily recognized by employers, resulting in a substantial impact on career progress. In contrast, the signal of sidestepping is less apparent and possibly results in worsened employment outcomes because sidesteppers presumably aim at career change. Previous literature (with the exception of Li, König, Buchmann, & Sacchi, 2000; Vono de Vilhena, Kosyakova, Kilpi-Jakonen, & McMullin, 2015) neglected these important aspects by examining all types of formal adult education together. A differentiation might explain the contradicting findings of previous research.

With regard to employment outcomes, I particularly focus on whether adult education is a “solution” to enhance (re-)employment chances, to contribute to occupational upward mobility, and to prevent occupational downward mobility.⁹⁶ A positive answer to at least some of these questions would mean that adult education could indeed compensate for existing social inequalities. However, adult education may also be detrimental to social inequality if initially advantaged individuals enjoy higher returns than initially disadvantaged

⁹⁵ I do not examine non-formal adult education (such as training) because it is mainly employer-supported and is associated with poaching, thereby reducing potential returns to this training type (see Blanden et al., 2012). Furthermore, in spite of transition in Russia, qualification obtainment is more typical in the formal educational system and through formal education types. Finally, the data used do not allow for appropriate measurement of non-formal education (which used to be of shorter duration) as only events with a duration of over 3 months were surveyed.

⁹⁶ I do not examine wages returns due to lacking information on this indicator in my data. Due to wage compression under the Soviet regime, wages may also be a less-relevant outcome. For instance, upward occupational mobility returned rather small wage rewards but increased access to privileges, higher status, and social security (see Clarke, 1999, pp. 62–63). Consequently, up- and downward mobility seem to be more promising outcomes as higher occupational positions are linked with monetary (earnings) and non-monetary rewards (living standards, social benefits, cultural assets) (see Yanowitch, 1977, Chapter 2).

individuals. To explore this question, I further examine (3) whether returns to adult education vary by initial educational level. Finally, to understand whether adult education was an effective tool after regime change in Russia, I investigate (4) whether and how returns to formal adult education changed over the regime change.

To address these questions empirically, I use linked retrospective data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey for Russia (EES). My sample includes men and women who attained initial education and entered the labor market entry. Life histories for the Soviet (1965-1990) and post-Soviet periods (1991-2005) are covered. This unique dataset for Russia allows for studying the effects of returns to both adult and initial education on career outcomes as well as the role played by the regime change.

7.2 Contextual background

In Soviet Russia, both education and employment system followed needs and goals of the planned economy. Correspondingly, the whole system was designed to function in a streamline way. The educational system was highly centralized and standardized in order to ensure a sufficient supply of graduates whose qualifications would properly match the skills required by the planned economy. The system of adult education was state-controlled and well-developed, included compulsory education, improvement of qualifications, and advanced training, and had a remarkable network of participating educational institutions (Khokhlova et al., 2013; Zajda, 2003). The transition from school to work was coordinated by state institutions, which assigned graduates to particular jobs (Gerber, 2003), ensuring high occupational specificity. These characteristics together linked educational certificates with occupations in a perfect way (Gerber, 2002, 2003). Employment was guaranteed and was a main channel for social provision (Standing, 1996). Unemployment though existed, was illegal and kept at lower levels (Gregory & Collier, 1988). Strong occupational boundaries, state control (and sanctioning) over planning, hiring and firing of personnel, encouragement of long-term loyalty to the same employer via access to (non-)monetary privileges restricted job and occupational mobility (Clarke, 1999; Uunk et al., 2005). Collective wage agreements created less incentives for additional effort.

The collapse of the Soviet Union in 1991 and the consequent liberalization of the labor system led to the radical changes in the professional labor market structure. An almost instant

devaluation of the human capital accumulated under the communist regime resulted in a massive shifts of workers across firms, occupations, and sectors (Kapeliushnikov & Lukiyanova, 2010; Sabirianova, 2002). Unemployment emerged from almost zero point, though to much lower extent compared to the other post-socialist economies (van der Lippe & Fodor, 1998).⁹⁷ Formally, the employment protection legislation is very strict from the comparative perspective (OECD, 2011a), but standards are not heavily enforced (Gimpelson et al., 2010). Weak bargaining power of workers and trade unions, labor market volatility, and high hiring and separation rates became peculiar to the Russian labor market (Kapeliushnikov et al., 2011), suggesting lower turnover costs.

The state monopoly on education was eliminated in the early 1990s, which induced the growth of paid educational programs and private universities and consequently expanded enrolment rates in tertiary education (Frumin et al., 2013). At the same time, mandatory job assignment was abandoned, and employers' involvement in the development of professional standards diminished. Overall, employers were less interested in cooperating and taking part in the educational process, e.g., in terms of offering adult education and apprenticeships. Nevertheless, due to the lower priority of the education sector for the reformers and financial constraints, the social changes of the early 1990s left the educational system (inclusive adult education system) relatively intact compared with other institutions (e.g., the labor market), and no significant reforms in the area of professional education were introduced (Frumin et al., 2013). As a result, the organizational aspects of educational institutions and educational standards lagged behind the demands of the new economy. The educational system became much less vocationally oriented, and the linkage between the educational system and the labor market faded. Hence, educational certificates became much weaker "signaling devices" of the applicants' productivity level (e.g., Gerber 2003).

7.3 Theoretical framework on returns to formal (adult) education

It is well known that initial educational attainment affects occupational allocation and contributes to wages and career prospects. Human capital (G. S. Becker, 1964), signaling (Spence, 1973), credentialism (Collins, 1979), and job competition (Thurow, 1972) theories

⁹⁷ Unemployment grew gradually: it increased from 5.2% in 1992 to a peak of 13.3% in 1998 and then declined to 7.2% in 2005 (Gimpelson & Kapeliushnikov, 2013, fig. 29.3).

aim to explain this relationship. Likewise, these theories may elucidate the nexus between qualifications obtained at a mature age and subsequent employment outcomes, while institutional explanations may shed some light on the role of the regime change. The following discussion approaches these theories in respect to adult educational returns, distinguishing between potentials of upgrading and sidestepping strategies.

7.3.1 Individual-level explanations

Human capital theory (G. S. Becker, 1964) assumes perfect information and understands educational certificates as a reliable measure for employee's performance. Since schooling enhances skills, competences, and abilities required for job performance (Bills, 2003), more schooling implies better skills and abilities and thus higher productivity levels. More-educated employees have higher labor market value and respectively higher wages as well as more secure positions (G. S. Becker, 1964; Mincer, 1989). Applying this logic to adult education, employers are expected to value formal adult education because it is coupled with higher worker productivity. However, this fact concerns only upgrading as it reflects increased employees' skills and competences. Sidestepping, in turn, may be connected with a depreciation of initial investments in human capital (Li et al. 2000) and is less likely to have a positive impact on upward moves in the occupational hierarchy. Nevertheless, sidestepping may be associated with corrections of wrong decisions made in the early life course and should hence reduce risks of downward mobility and increase (re-)employment chances.

Signaling theory (Spence, 1973) relaxes the perfect information assumption and focuses on the signaling function of education. In order to reach a conclusion about job applicants' potential productivity level, employers use observable indices (unalterable characteristics such as sex, race, and so forth.) and signals (alterable characteristics such as educational credentials, labor market experience, and so forth) (Spence, 1973). Better-educated applicants usually possess "desirable" and "productive" attributes such as higher motivation, are more committed to their jobs, and have healthier lifestyles (Li et al., 2000, p. 46). Consequently, they are more attractive to employers. In line with these arguments, formal adult education serves as a crucial signal because it implicates comparably high time- and monetary investments and thus points out the high motivation of job applicants. Consequently, both upgrading and sidestepping should be profitable for employment outcomes. Upgrading might additionally signal enhanced productivity levels, thereby implying a stronger positive impact on career prospects than sidestepping.

Credentialism theory (Collins, 1979) argues that education functions as a means of social exclusion. The theory emphasizes that more-educated individuals experience socio-economic success over the life course not because they necessarily possess higher skills and knowledge, but because they are able to control and restrict access to the most favorable and privileged occupations and positions (Bills, 2003). This situation is considered societally appropriate and desirable. Accordingly, upgrading should lead to higher-rank positions and occupations; sidestepping would help only those already in higher positions (i.e., the better-educated) to retain these positions because these learners already “have access”.

The theory of job competition (Thurow, 1972) posits that it is not the actual skill level itself that is important for job assignment, but rather a relative position of the worker in the labor queue; the most preferred applicant gets the best jobs. The main premise here is that all skills that are important for doing a job are acquired after entering the job. The primary objective of the labor market is “matching trainable individuals with training ladders” and not with skills suppliers or those demanding these skills (Thurow, 1972, p. 72). Profit-oriented employers screen and rank job applicants based on their trainability, relying on signals derived from background characteristics. Education is premised to be one of the most important screens for trainability, and the more-educated are thus preferred. However, since the core idea of this theory is the relative position of the individual in the job queue, a growing supply of the more-educated workforce devaluates its signaling power. As result, acquiring even more education (later in life) becomes a defensive instrument in order to remain in a job. So what does this theory infer about adult education? On the one hand, the least-educated, in particular, should benefit from upgrading as their relative position will be enhanced, thus moving them forward in the job queue. On the other hand, for higher-educated individuals, upgrading should work as a defense mechanism to help them keep their position, thus preventing downward mobility. With regard to sidestepping, the situation is not as clear-cut and rather suggests pushing downward, at least in the short run. However, recent sidestepping may also signal the “trainability” of the job applicant and thus be positively related to upward mobility chances.

7.3.2 Gender differences

According to the economic theories presented above, the adult education should pay off solely based on human capital and labor force experience independently of gender. Hence, economic accounts argue in a gender-neutral way (H.-P. Blossfeld, Buchholz, et al., 2015).

There are, however, other explanations that underline the role of gender in returns to (adult) education (see section 5.3, for detailed discussion). In particular, it has been argued that women might be hindered to reap (adult) educational returns to the same extent as men due to family role-taking, discrimination, and occupational concentration in lower-paying jobs (Felmlee, 1988; Li et al., 2000).

In spite of this, the literature constantly reports higher returns to adult education for women than for men once family responsibilities, age and previous occupation are controlled for. For instance, adult education returns higher earnings for women than for men (Blanden et al., 2012; De Coulon & Vignoles, 2008; Hällsten, 2012; Jacobson, LaLonde, & Sullivan, 2005; Stenberg, Luna, & Olle Westerlund, 2011);⁹⁸ similarly, women gain more than men in terms of occupational upward mobility and employment chances (Jenkins et al., 2003; Kilpi-Jakonen et al., 2012 for Sweden and the UK). Empirical studies contended that these higher (formal) adult education returns result from (a) industrial segregation benefiting women, (b) a stronger signaling component of female credentials (Blanden et al., 2012), (c) a positive selection of women into adult education (Li et al., 2000), and (d) a more specific demand for adult education due to higher labor market absenteeism of women (Stenberg et al., 2011). Compared to females male adult learners seem to possess more marginalized labor market positions, which convey negative signals to potential employers, thereby counteracting positive signals of added credentials.

7.3.3 The influence of country-specific settings

The cross-comparative literature on returns to education emphasizes the role of institutional settings for labor market success. Characteristics of the educational environment and educational opportunities are of great consequence, because they define the importance of the certificates and the level of occupational boundaries in the labor market (Allmendinger, 1989; Müller & Shavit, 1998).

In highly standardized and stratified educational systems, credentials provide clear and reliable information (signal) about applicants' proficiency, knowledge, and skill level (Allmendinger, 1989). Educational systems with higher vocational orientation ensure more

⁹⁸ Though, see Kilbourne, England, Farkas, Beron, & Weir (1994) for contra-evidence.

secure school-to-work transitions and better “matches” between educational qualification and occupation (Müller & Shavit, 1998). However, these characteristics can also constrain job mobility and career prospects (Scherer, 2005). Conversely, in countries with lower standardization, stratification, and vocational specificity, the qualification-occupation link is looser, and the main emphasis is on the production of general competences and skills (Soskice, 1999). As result, skills and knowledge transmitted by educational system are less clear for employers, resulting in a higher rate of job mismatches and job mobility (Scherer, 2005). In such systems, graduates often first need on-the-job training to be useful to their employer. Thus, educational qualifications are not valued as credentials, but rather as signals for job applicants’ trainability, potential productivity, and work habits, resulting in higher value of academic education (Müller & Shavit, 1998).

While the arrangement of the educational system determines job-seekers’ attractiveness and suitability for perspective employers, the employment system and the level of employment regulations affect the employer’s freedom to dismiss workers (Gangl, 2003). In this context, the literature often distinguishes between two extremes: “coordinated” market economies (CMEs), with reciprocal relationships between market actors, and “uncoordinated” or “liberal” market economies (LMEs), based on the market relationships (Soskice, 1999).

CMEs are characterized by trust relationships, long-term commitments, a high level of employment protection, and powerful unions. CMEs are usually supported by standardized, stratified, and vocationally oriented educational systems with strong involvement of employers in the skill-acquisition process (Müller & Shavit, 1998). All these characteristics reduce labor market dynamics in CMEs (Gangl, 2003). As result, the established workforce (insiders) enjoys privileged positions, support, and security. The outsiders (e.g., re-entrants or those in unfavorable job situations) face difficulties in finding stable and appropriate employment and are at risk of getting into (or being stuck in) precarious jobs or being unemployed. Conversely, open employment relationships, with lower levels of state intervention, short-term competitive relationships between employers and employees, and high labor market turnover and employment mobility, are typical features of LMEs. Labor market success is determined more by individual resources such as performance as well as recent education and employment history, while initial educational investments recede into the background (DiPrete, De Graaf, Luijkx, Tahlin, & Blossfeld, 1997). LMEs rely on

general skills, and educational systems are commonly characterized by low or even absent vocational specificity (Soskice, 1999).

Applying this deliberation to the Russian context presented earlier, it can be argued that the functioning of the Soviet educational and employment systems is more comparable with CMEs. In turn, post-Soviet frameworks suggest a mix of both because of labor legislation strictness, as in CMEs, and high labor market volatility and flexibility, as in LMEs (Kapeliushnikov et al., 2011). Nevertheless, among post-socialist countries, Russia appears among “the most liberal” (Knell & Srholec, 2007, p. 55).

With regard to adult-education returns, we may expect that they are lower in CMEs (versus LMEs) as chances to improve one’s labor market position are more limited (Vono de Vilhena et al., 2016). Additionally, adult learners are likely to belong to labor market outsiders (e.g., unemployed, inactive, or part-time workers) who might face higher labor market risks under the Soviet regime. Accordingly, the attainment of education in mature age may not necessarily improve the employment outcomes of Soviet adult learners. On the other hand, the impact of formal adult education should still be favorable due to the strong linkage and coordination between education and employment systems. This means that upgrading provides employers with more productive workers, while sidestepping should at least facilitate a better match to other job.

In post-Soviet Russia, education and the labor market became loosely linked, resulting in poorer information of the certificates with regard to obtained skills and knowledge. In spite of this, recent participation in adult education might still work as a signal for employers of higher motivation and productivity levels (H.-P. Blossfeld et al., 2014). Additionally, in LMEs, labor market characteristics do not create obstacles for the positive impact of adult education on employment outcomes (Vono de Vilhena et al., 2016). Thus, compared with the Soviet patterns, returns to adult education after the fall should be more pronounced.⁹⁹ Finally, following the Nee’s Market transition theory, the liberalization of the markets alters incentive structure and raises effort (Nee, 1989). As result, human capital investments become better proxies for individual skills and productivity (Noelke & Müller, 2011, pp. 5–6). Therefore,

⁹⁹ This expectation can be further supported by the fact that the rates of returns to (initial) schooling are generally higher in LMEs-type countries compared with CMEs-type countries (Cohn & Addison, 1998).

adult education should return better labor market outcomes in post-Soviet Russia, and particularly upgrading due to its signal of higher skills and productivity.

7.4 Research design

My empirical investigation is based on linked data from the Russian Generations and Gender Survey (GGS) and the Education and Employment Survey for Russia (EES). Details on both surveys can be found in Chapter 4.

7.4.1 Risk sample

For the research on adult-education returns, the sample is restricted to “adults”, i.e., those at risk of being an adult learner. This definition excludes individual episodes before completing initial education, which is defined either by a) closing gaps of less than 12 months between two educational spells or b) enrolment in education in the “normal age range”. For more details on the definition of completion of initial education, see Section 4.2.1, and on the definition of “adults”, see section 6.4.1.

To capture the beginning of the career, the sample is further confined to episodes and events after labor market entry occurred.¹⁰⁰ Accordingly, episodes are censored on the left at the time of the first observable employment episode. On the right, the observational window at the interview date, or when the respondent is in the pre-retirement age (49 for women and 54 for men). After these restrictions, the data includes about 91% of EES respondents (2,245 men and 3,614 women).

7.4.2 Dependent variables

Three sets of employment outcomes are examined: (1) re-employment chances, (2) upward occupational mobility, and (3) downward occupational mobility. I employ event-history analysis, which is particularly useful for examining labor market career processes since it allows for appropriately modeling the time-dependency and casual relationships between the

¹⁰⁰ Labor market entry is defined as entry into any first job after having completed initial education. This definition slightly differs from that in Chapter 5, where only jobs lasted 6 months or more were considered. This approach accounts for all job moves of individuals who made the school-to-work transition (after initial education has been attained). Moreover, particularly entry into short-term jobs may incline individuals to re-enter education in order to improve employment opportunities.

variables of interest (H.-P. Blossfeld et al., 2007). Event-history analyses can best consider interdependent processes at the micro (e.g., educational careers) and macro (e.g., regime change) levels because future changes in the processes are linked and are dependent on current changes in processes (cf. H.-P. Blossfeld et al., 2007). Finally, event-history models are well suited to capturing right-censoring (when the end of the episode is not observed). Table 7–1 contains an overview of the main modeling details in the logic of event-history analyses.

Table 7–1: Modelling details: Events, risk sample, and time

Outcome	Re-employment chances	Occupational mobility	
Event	Transition from non-employment to employment	Transition towards higher occupational class	Transition towards lower occupational class
Risk sample	Unemployed or inactive	Unskilled and skilled manual workers, services, semi-professionals, professionals	Skilled manual workers, services, semi-professionals, professionals, managers
Time clock starts	Non-employment entry (conditional on the occurrence of labor market entry)	Labor market entry	
Time clock ends	Entry into employment, or interview date in the case of right censoring or age 50 or 55 for women or men, respectively	Interview date in the case of right-censoring or age 50 or 55 for women or men, respectively	
Process time	Time since individuals entered non-employment, i.e., non-employment experience	Time since labor market entry, i.e., general labor force experience	
Model	Continuous time piece-wise constant exponential transition rate model with single episodes	Continuous time competing risk piece-wise constant exponential transition rate model with repeated events	

Note: Own illustration.

In the *(re-)employment chances* analyses, the event is defined as a transition from non-employment to employment. This outcome is crucial because improved (re-)employment chances are “the first stepping stone for a broader range of improvements in the labor market” (Kilpi-Jakonen et al., 2012, p. 49). The risk sample includes non-working episodes (unemployment and inactivity). The numbers in my sample were not sufficient to study unemployment separately from other types of non-employment¹⁰¹ because the EES only surveyed episodes, which lasted 3 months and more. Less than 1% and 5% of the episodes can be identified as unemployment during the Soviet and post-Soviet period, respectively.

¹⁰¹ I control for the type of non-employment episode in the statistical model.

To study *occupational up- and downward mobility*, I refer to the occupational class based on the European Socioeconomic Classification (ESeC, see Gerber & Hout, 2004 for details), which is similar to the Erikson-Goldthorpe-Portocarero (EGP) schema. ESeC is based on employment relationships, work autonomy and skills in a job, and these characteristics were less likely to change over the fall, which would be the case for measures like prestige or socio-economic index (Billingsley & Matysiak, 2012). Upward (downward) mobility is defined as any movement towards a higher (lower) occupational class. I model occupational mobility, employing a competing-risk approach with two transition states: upward and downward occupational mobility. All other exits are treated as censored (e.g., lateral occupational moves, exits to unemployment, or inactivity).

7.4.3 Transition-rate models

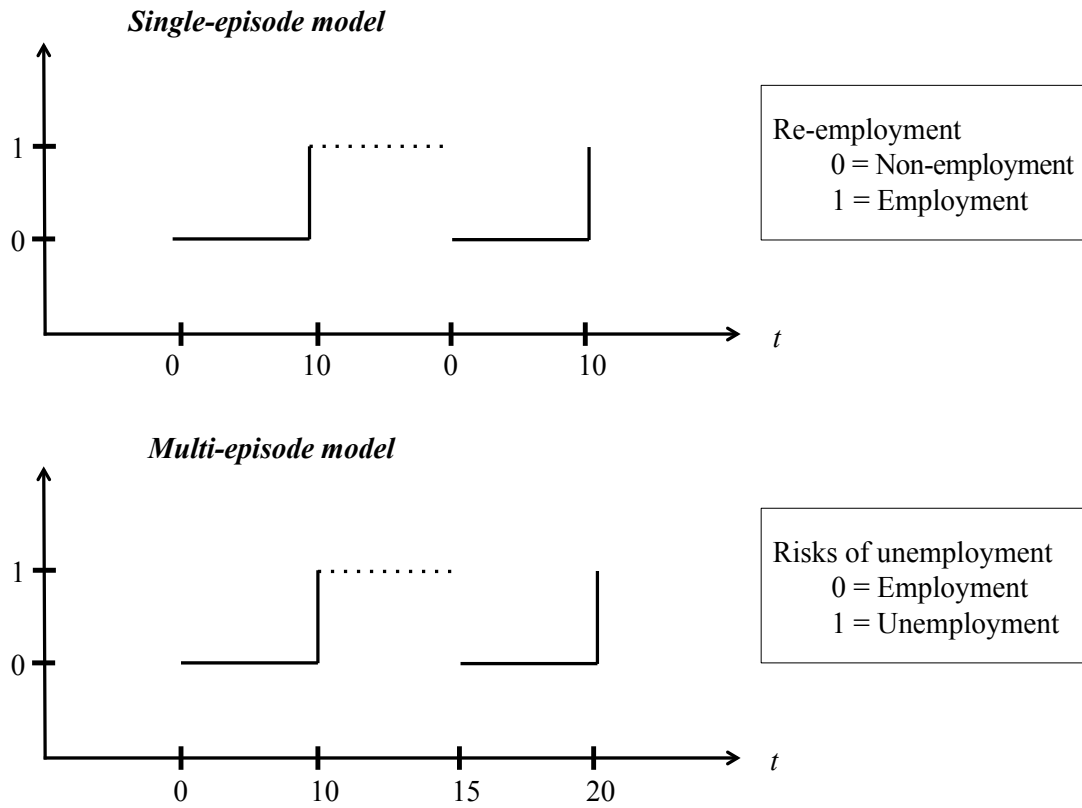
In general, the transition rate in continuous-time models is defined as:

$$r(t) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | T \geq t)}{t' - t}.$$

Using this formulation, the rate can be interpreted as the instantaneous probability of experiencing an event. More specifically, the rate equals the probability that the event time lies within the infinitesimal interval (t, t') given that individual “survived” up to t , standardized by the time interval (t, t') . In my multiple-episode models (occupational mobility), individuals might experience a certain event repeatedly on a common time axis (time since labor market entry). This implies that the individual might enter, exit, and re-enter the risk set for the process under study along the time axis. In other words, a multi-episode is used to build the representative risk set for the life career. In contrast, in the single episode models ((re-)employment chances), the clock is reset to zero for every single episode. Figure 7–1 provides a conceptual overview to both approaches.¹⁰²

¹⁰² This is given by the data organization.

Figure 7–1: Modeling of an individual career in a single- and multi-episode modeling approach



Note: Own illustration.

Time dependency is modeled using a piece-wise constant approach. This approach is useful to control the dependency of duration, while it does not require complex assumptions about the time-dependence of the processes (H.-P. Blossfeld et al., 2007). Durations are assumed to follow an exponential distribution that implies a time-constant hazard rate. By introducing period-specific dummy variables, the rate is allowed to vary over these periods. As a result, the models are parameterized as follows:

$$\ln r_k(t) = A\tau + X\beta + Z\delta,$$

where A is a vector of period dummies, X a vector of time-constant covariates, and Z is a vector of time-varying covariates. τ , β , and δ are vectors of parameters to be estimated from the data.

Nonetheless, casual inference is limited by potential endogeneity of (adult) education decisions being inbred in the nature of the observational data. For instance, it cannot be excluded that in some cases employers may give a commitment to a job promotion,

conditional on employee's acquisition additional formal qualification. Moreover, there might be an omitted variable bias. For instance, it could be that productive characteristics such as ability or motivation impact upon both education decisions and positive career outcomes (see Dieckhoff, 2007; Jenkins, 2006). As these characteristics cannot be accounted for in my data, some caution is warranted with regard to interpreting the estimated impact of (adult) education on career outcomes in too strict causal terms. Hence, in order to minimize bias due to confounding influences, I account for a whole array of covariates.

7.4.4 Independent variables

The main variables of interest are the time-varying dummy covariates measuring the completion of different types of adult education, i.e., *upgrading* and *sidestepping*. Upgrading is classified as having completed education that is higher than previously attained, while sidestepping is any other type of adult education that cannot be classified as upgrading. I consider obtaining adult education, regardless of whether it was completed with or without a diploma. The human-capital approach suggests that such investments in education also contribute to skills improvement or additional skills formation, though they might be lower when compared with “certified” skills (PIAAC, 2011, p. 29). Following the signaling approach, obtaining a diploma might be less important than participation in adult education. Additionally, by using this definition, I increase the sample of adult learners: 24% of upgraders and 7% of sidesteppers completed adult education without a diploma.

Returns to formal adult education often do not materialize right away but are first visible several years after a learning event and may grow over time (Blanden et al., 2012). Therefore, I opt for studying adult-education returns in terms of a long-term effect (“total effect”, Blanden et al., 2012, p. 505), in which adult-education variables change their values from zero to one as soon as a person completes adult education (see Figure E–1 in Appendix E).¹⁰³

¹⁰³ In additional analyses, I examined (1) a short-term effect, in which adult-education variables are assigned to one at the end of each episode a person completes adult education; and (2) a lagged effect, in which time periods since completing adult education are considered. In many cases, I found the strongest effect of adult education right after graduation. This association became weaker over time, though adult education still paid off, e.g., after 10 years after graduation. Results are available upon request.

To reduce the problem of unobserved heterogeneity, I include the following time-constant and time-varying controls that may influence participation in adult education and employment status: *Initial educational level* is an important determinant for the subsequent career outcomes as well as for adult educational enrolment (e.g., Jenkins et al., 2003). Original variable for initial education is collapsed into three attainment levels: low (incomplete secondary), medium (lower vocational and secondary completed), high (secondary and higher professional). I account for gender (*female*), because women tend to have career trajectories being different from men due to competing family roles (e.g., Härkönen & Manzoni, 2016). As mentioned, there might be gender differences in returns to adult education (see Section 7.3.2). *Age of labor market entry* may be associated with success in the job search as well as with the attained educational level. In this sense, earlier (usually lower-qualified) labor market entrants enjoy a “starting advantage” before the higher-qualified entrants take over (Hillmert, 2011, p. 418). Both factors may influence the subsequent career-attainment process. I control for *socio-economic origin* because own labor market success is often boosted by advantaged socio-economic origin throughout individuals’ life courses (Hillmert, 2011), which was even the case under the socialist regime (Gerber & Hout, 1995). Additionally, socio-economic origin might partly approximate the ability and resources associated with parental background.¹⁰⁴

The career-attainment process is embedded in the social structure and is strongly determined by actual historical time as well as by the historical time of the labor market entry (H.-P. Blossfeld, 1986). Accordingly, I control for *post-Soviet labor market entry* if the entry occurred after 1990 and for the *post-Soviet period* if the actual spell is related to the time after 1990. I further account for competing family roles (being *married* and presence of *children*) as these obviously influence educational and labor market opportunities. Since Russian women had to take over gainful employment as well as household work, this double burden might particularly dampen females’ occupational mobility and promotion possibilities (see Chapter 5). At the same time, family roles might also have a stabilization effect on males’ careers, because children increase mobility costs for men (Maltseva, 2005). A control for

¹⁰⁴ Warren, Sheridan and Hauser (2002) found that the socio-economic-origin effect operates throughout educational attainment and ability.

rural residence area enters the models to capture the current place of residence since both employment and adult education opportunities are usually restricted in rural areas.

In the models for the employed, I additionally consider “available career resources” and control for having an *authoritative position* and being part of the *higher-level occupational class* ((semi-)professionals and managers). This also captures the “ceiling” effect (Li et al., 2000). Due to restricted opportunities for occupational mobility, I further control for being *self-employed*, a *family-worker*, or a *farmer* (Mach et al., 1994). Since turnover rates vary strongly among economic sectors in Russia (see, e.g., GOSKOMSTAT USSR, 1988, p. 258; GOSKOMSTAT, 2001, p. 106), I account for *sectors of economy*. *Previous number of jobs* enters as a continuous measure of labor force experience. In the analyses of (re-)employment chances, variables for occupational class, authoritative position, sector of the economy, and self-employment are captured for the previous job. Since I model a single episode here, I need to account for the history of the process itself (see Heckman & Borjas, 1980). Hence, I control for number of previous non-working spells and previous labor force experiences.

Finally, I control for approximate education (see Section 4.2.1), for residence in Moscow or St. Petersburg at the time of the GGS survey (see Section 4.1), for whether the respondent has had the experience of employment interruptions (only for the employed), and for missing values in the multivariate models. For more information on variable construction, see Table 4–1 in Section 4.2.2.

7.5 Results

Before examining labor market returns to adult education, the following section illustrates descriptive statistics for key variables. First, the frequency of adult education completion is presented. In contrast to the Chapter 6, here I concentrate on the obtainment of and not the enrollment in adult education. Afterwards, the labor market transition processes of interest before and after the collapse of the Soviet period are depicted and discussed.

7.5.1 Descriptive results

Table 7–2 shows the proportion of individuals who upgraded or sidestepped during the observation period. Approximately 19% of the individuals in the sample upgraded their educational level, while only 8% completed sidestepping. These patterns vary substantially when we consider period differences. While about 15% of adults upgraded at least one time

during the Soviet period, this related to only 8.6% of adults during the post-Soviet period. About 8% sidestepped during the Soviet period, and a similar proportion sidestepped during the post-Soviet period.

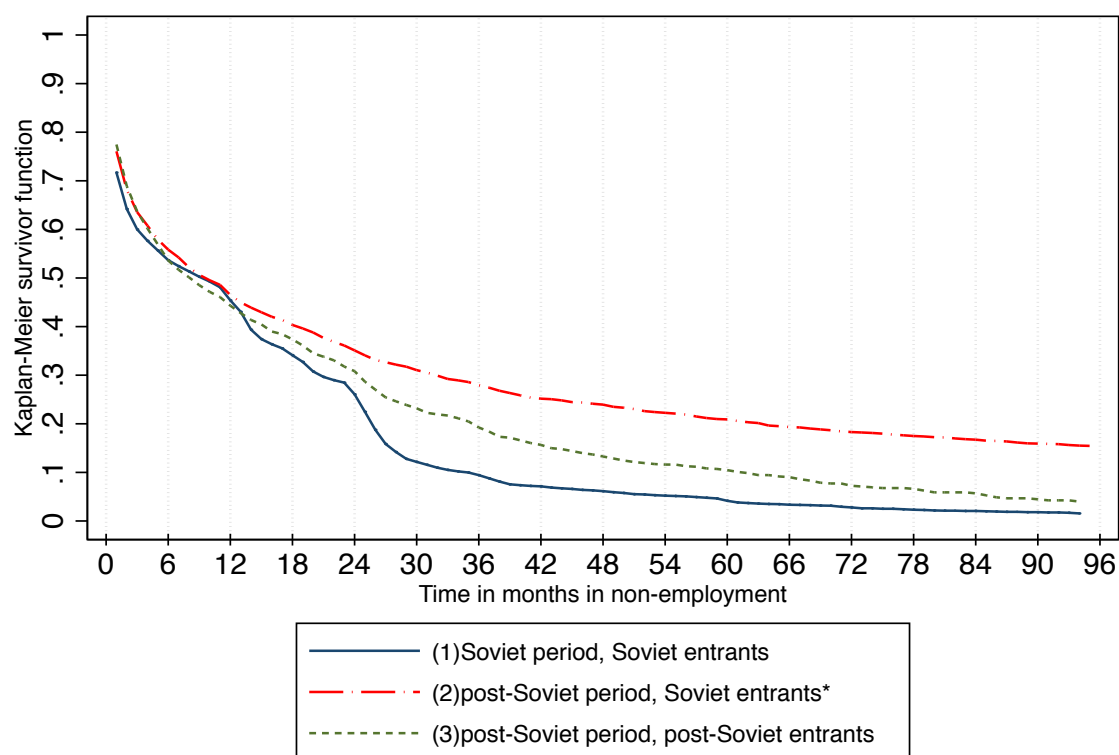
Table 7–2: Proportion of adult learners in Russia

	Analytical sample	Upgrading	Sidestepping
<i>Overall</i>			
In %	100%	18.52%	7.95%
Individuals	5,859	1,085	466
<i>Soviet period</i>			
In %	100%	15.04%	5.21%
Individuals	4,069	612	212
<i>Post-soviet period</i>			
In %	100%	8.60%	4.64%
Individuals	5,859	504	272

Note: Linked GGS (2004) and EES (2005) data; own calculations. Adult-education completion is considered as at least one-time completion per observation period. Thus, sample sizes and proportions across rows and columns do not add up in total.

Re-employment patterns are depicted in Figure 7–2. For visual simplicity, non-employment duration is cut by a maximum of 96 months. In general, the survival function decreases monotonically with increasing duration spent in non-employment for all groups. In the first three months of non-employment duration, the survival function decreases almost linearly and suggests that about 40% (36% for the post-Soviet period) of individuals enter employment. However, the patterns of re-employment differ slightly for distinct groups when longer-term non-employment is considered. Among Soviet entrants, the risk of not being re-employed during the Soviet period seems to be negligible (Group 1), suggesting successful labor market reintegration in line with the Communist principle of full employment. Examining the post-Soviet period, we find that the Soviet entrants (Group 2) face higher risks of not finding a job compared to the post-Soviet entrants (Group 3). Soviet experience probably serves as a penalty effect in the new dynamic labor market.

Figure 7–2: Plot of survivor functions (product-limit estimation) for (re-)employment chances for Soviet and post-Soviet labor market entrants, by period

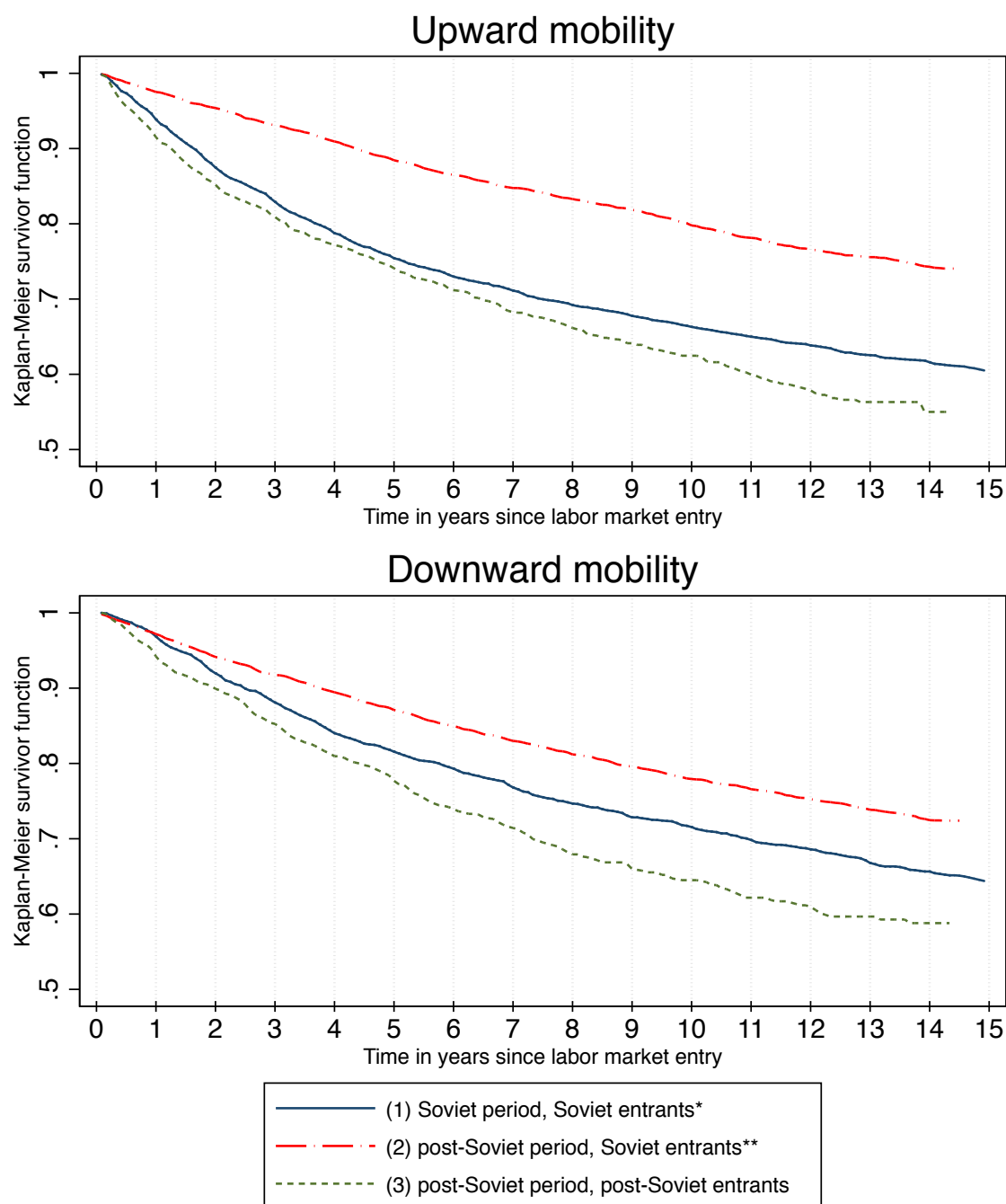


* labor market experience is set to a zero in the post-Soviet period

Note: Linked GGS (2004) and EES (2005) data; own calculations.

Figure 7–3 displays the transition patterns for upward and downward occupational mobility. First, among Soviet entrants, there are more upward than downward moves during the Soviet period (Group 1). Yet, during the post-Soviet period, Soviet entrants (Group 2) seem to be more mobile downward than upward. Additionally, Soviet entrants are generally less mobile after the collapse of the Soviet Union, suggesting a more established career process with growing labor market experience. Otherwise, this might be a further implication for the penalty effect of the labor market experience gained under the Communist regime (discussed above). Investigating at the post-Soviet entrants (Group 3), we find that they are better off compared with Soviet entrants (Group 1) when we consider upward mobility, whereas they are worse off with regard to downward mobility.

Figure 7–3: Plot of survivor functions (product-limit estimation) for up- and downward mobility for Soviet and post-Soviet labor market entrants, by period



* labor market experience is cut by a maximum of 15 years in the Soviet period

** labor market experience is set to a zero in the post-Soviet period

Note: Linked GGS (2004) and EES (2005) data; own calculations.

7.5.2 Multivariate results

Multivariate models are built up in the following steps: Model 1 presents average returns to adult education accounting for all covariates. Model 2 explores variation of adult education

returns by gender. By including an interaction term between initial and adult education, Model 3 addresses the question of whether adult education impacts on social inequality. In Model 4, interaction effects between post-Soviet-period and adult education are introduced. This model examines change in returns to adult education over the regime change. All models (excluding Model 2) are presented for the whole sample and separately for men and women. For the sake of presentation, controls are omitted in the main tables but are available in Appendix E.

7.5.2.1 Average returns to adult education

The results on average returns to adult education in terms of (re-)employment chances, up- and downward mobility are reported in Table 7–3.

Both upgrading and sidestepping increase the hazards of exiting non-employment with returns to sidestepping being higher than for upgrading (Model 1.1). Nevertheless, a Wald test yielded that returns do not differ statistically for types of adult education. Upgrading fosters upward mobility, whereas sidestepping does not (Model 2.1). However, this conclusion holds only for women. For men, both adult education strategies are sufficient instruments for way up and coefficients do not differ statistically. Upgrading may prevent downward mobility, though this seems to be true only for women (Model 3.1). The effect of sidestepping is not significant in either substantial or statistical terms. Altogether, for non-workers both upgrading and sidestepping are profitable. Among workers, only upgrading benefits women; men benefit from both adult education strategies, though only in terms of upward occupational mobility.

Table 7–3: Piece-wise constant exponential model, average effects (logit coefficients)

	Model 1.1 (Re-)Employment (non-workers)			Model 2.1 Upward mobility (workers)			Model 3.1 Downward mobility (workers)		
	All	Men	Women	All	Men	Women	All	Men	Women
<i>Post-Soviet period (ref. Soviet period)</i>	-0.38***	-0.11*	-0.52***	0.09	0.23*	0.01	0.34***	0.51***	0.28***
<i>Initial educational level (ref. High)</i>									
Medium	-0.18***	-0.14	-0.31***	-0.49***	-0.38**	-0.65***	0.87***	0.89***	0.73***
Low	-0.11***	-0.13*	-0.13***	-0.46***	-0.41***	-0.50***	0.60***	0.43***	0.63***
<i>Female (ref. Male)</i>	-0.28***			0.12**			0.04		
<i>Long-term effect of AE (ref. no AE)</i>									
UP	0.33***	0.34***	0.30***	0.51***	0.54***	0.52***	-0.33***	-0.19	-0.44***
SST	0.41***	0.43***	0.37***	0.10	0.29*	0.00	0.03	0.05	0.07
<i>(Further variables are omitted)</i>	<i>(see Table E-1, Appendix E-3)</i>								
Number of observations	44,085	15,474	28,611	102,414	38,741	63,673	8,7859	34,484	53,375
Number of sub-episodes	11,644	4,561	7,083	5,823	2,222	3,601	5,510	2,099	3,411
Number of failures	9,475	3,687	5,788	2,946	1,100	1,846	2,731	868	1,863
Number of individuals	4,550	1,730	2,820	5,823	2,222	3,601	5,998	2,274	3,724

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. AE=adult education, UP=upgrading,

SST=Sidestepping. For model fit, see Table E-2, Appendix E.

Looking at the other covariates, we find that in all cases higher initial education level is an important instrument to improve labor market position and avoid labor market risks, *ceteris paribus* (Models 1.1, 2.1, and 3.1). Women are in general less likely to enter employment after non-employment (Model 1.1). On the other hand, among workers, women are more mobile upwardly than men (Model 2.1) and there are no gender differences in terms of downward mobility risks (Model 3.1). After the collapse of the Soviet Union risks of labor market failure have been enlarged: non-workers face difficulties to (re-)enter employment (Model 1.1), while workers become more downwardly mobile (Model 3.1), and these negative developments are not compensated by more chances for upward mobility (Model 2.1). These results are in line with empirical evidence for Russia's post-Soviet period (see Chapter 3).

The model results suggest that the Soviet Union collapse harmed women more than men. To explore this in more detail, I included an interaction effect between gender and period in additional analyses (results are not shown). Indeed, there are notable developments worth of discussion. Under the Soviet regime there were no gender differences in finding a new job ($p=0.069$), women (compared to men) were more likely to be upwardly mobile ($p<0.001$) but also faced greater risks of downwardly moves ($p<0.001$). The Soviet Union collapse impaired females' chances for (re-)employment ($p<0.001$), and had no statistically significant effect for men ($p=0.350$). At the same time, men became more upwardly mobile ($p<0.01$), while women did not ($p=0.706$). Although both men and women faced higher risks of downward mobility (women: $p<0.001$, men: $p<0.001$), these risks were greater for men. As a result of these developments, gender inequalities to the female disadvantage in (re-)employment chances rose ($p<0.001$), women lost their advantage in to upward mobility chances ($p=0.706$), but won in regard to lower risks of downward mobility ($p<0.05$).

7.5.2.2 Returns to adult education and gender

The analyses above as well as theoretical elaborations lead to the expectation that returns to adult education do vary by gender. Accordingly, the following models include interaction terms between gender and adult education variables (Table 7–4).

Table 7–4: Piece-wise constant exponential models, interactions between adult education and gender (logit coefficients)

	Model 1.2, (Re-)Employment, (non-workers)	Model 2.2, Upward mobility, (workers)	Model 3.2, Downward mobility, (workers)
<i>Post-Soviet period (ref. Soviet period)</i>	-0.38***	0.08	0.34***
<i>Initial educational level (ref. High)</i>			
Medium	-0.17***	-0.49***	0.88***
Low	-0.10***	-0.47***	0.60***
<i>Female (ref. Male)</i>	-0.24***	0.11*	0.08
<i>Long-term effect of AE (ref. no AE)</i>			
UP	0.38***	0.47***	-0.17
UP x Female	-0.09	0.07	-0.30*
SST	0.57***	0.13	0.01
SST x Female	-0.27**	-0.07	0.05
<i>(Further variables are omitted)</i>	<i>(see Table E–3, Appendix E)</i>	<i>(see Table E–4, Appendix E)</i>	<i>(see Table E–5, Appendix E)</i>
Number of observations	44,085	102,414	8,7859
Number of sub-episodes	11,644	5,823	5,510
Number of failures	9,475	2,946	2,731
Number of individuals	4,550	5,823	5,998

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < .05$, ** $p < .01$, *** $p < .001$. AE=adult education, UP=upgrading, SST=Sidestepping. For model fit, see Table E-2, Appendix E.

The results for (re-)employment analyses (Model 1.2, Table 7–4) indicate slightly higher returns to upgrading for men than for women, however, these differences are not statistically significant. Yet, men enjoy almost twice of returns to sidestepping than women. Regarding upward mobility, there are no statistically significant gender differences in returns to upgrading, and sidestepping returns no positive rewards for both genders (Model 2.2). For downward mobility risks, we find that only women benefit from upgrading, while sidestepping does not pay of neither for women nor for men (Model 3.2). Bringing together, among non-workers, men and women benefit from upgrading to the similar extent, while sidestepping is more profitable for men. Among workers, upgrading can reduce labor market failures for women in a more effective way than for men.

7.5.2.3 Returns to adult education and social inequality

Table 7–5 presents the results on interaction effects between adult-education variables and initial educational. This set of models explores the question on whether adult education is an effective tool to alleviate existing social inequalities in labor market outcomes due to initial educational level. I calculated the average partial effect (APE) of adult education for each educational level for each employment outcome. These results are presented in Table 7–6.

The APE of adult education illustrates the average difference to non-participants in predicted hazards of exiting from origin status to destination, conditional on the covariates in the model and their distribution in the sample. This effect can be interpreted as an adult-education premium on the hazard scale. The right part of Table 7–6 additionally contrasts the effect of adult education for different educational levels (corresponding to a change of the reference category).

Upgrading

Looking at the (re-)employment chances of non-workers (Model 1.3, Table 7–5), the interaction effect between upgrading and initial education implies that the distance between higher- (and medium-)educated non-participants and upgraders is larger than the distance between lower-educated non-participants and upgraders (see Table 7–6 for APEs of adult education). This means that the relative benefit from adult education is higher for those already more-educated (particularly for men), and this is complementary to the overall premium of more schooling on the higher chances of finding a job. Thus, since those who are initially more educated are by far the primary beneficiaries of upgrading, upgrading is exacerbating social inequalities in labor market outcomes. On the other hand, the data does not allow a firm conclusion on whether differences between the least- and highest-educated upgraders are statistically significant.

For occupational upward mobility (Model 2.3, Table 7–5), the higher the initial educational level is, the higher the premium of upgrading is (see Table 7–6 for APEs of adult education). Yet, looking at the stratified models by gender, we find that these patterns are specifically true for women. For men, we find similar trends, though the statistical test of the interaction effect indicates that the differences in the upgrading effect do not differ statistically by initial educational level. In sum, these results underline that upgrading tends to have an exacerbation effect on social inequality especially for women.

Table 7–5: Piece-wise constant exponential models, interactions between adult education and initial education level (logit coefficients)

	Model 1.3 (Re-)Employment (non-workers)			Model 2.3 Upward mobility (workers)			Model 3.3 Downward mobility (workers)		
	All	Men	Women	All	Men	Women	All	Men	Women
<i>Post-Soviet period (ref. Soviet period)</i>	-0.38***	-0.11*	-0.52***	0.08	0.23*	0.01	0.34***	0.50***	0.29***
<i>Initial educational level (ref. High)</i>									
Medium	-0.17**	-0.12	-0.31***	-0.44***	-0.38**	-0.59***	0.85***	0.94***	0.68***
Low	-0.13***	-0.15**	-0.14***	-0.45***	-0.41***	-0.48***	0.63***	0.52***	0.63***
<i>Female (ref. Male)</i>	-0.28***			0.12**			0.04		
<i>Long-term effect of AE (ref. no AE)</i>									
UP	0.33***	0.46**	0.28*	0.84***	0.61*	1.06***	-0.11	0.37	-0.50*
UP x Medium	-0.11	-0.24	-0.02	-0.51**	-0.11	-0.77**	0.00	-0.50	0.43
UP x Low	0.05	-0.06	0.04	-0.34*	-0.08	-0.58**	-0.34	-0.71**	-0.04
SST	0.29***	0.32*	0.34***	0.07	0.22	0.03	0.02	0.13	-0.05
SST x Medium	-0.54	-0.76	1.55**	0.99	1.38	0.32	-1.32	-1.01	-14.36
SST x Low	0.25**	0.23	0.07	0.02	0.08	-0.08	0.05	-0.08	0.25
<i>(Further variables are omitted)</i>	<i>(see Table E–1, Appendix E–3)</i>			<i>(see Table E–2, Appendix E–4)</i>			<i>(see Table E–3, Appendix E–5)</i>		
Number of observations	44,085	15,474	28,611	102,414	38,741	63,673	8,7859	34,484	53,375
Number of sub-episodes	11,644	4,561	7,083	5,823	2,222	3,601	5,510	2,099	3,411
Number of failures	9,475	3,687	5,788	2,946	1,100	1,846	2,731	868	1,863
Number of individuals	4,550	1,730	2,820	5,823	2,222	3,601	5,998	2,274	3,724

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. AE=adult education, UP=upgrading,

SST=Sidestepping. For model fit, see Table E-2, Appendix E.

Table 7–6: Tests of interaction effects between adult education and initial educational level

	All		Men		Women	
	APE ^a	Contrast versus ^b	APE ^a	Contrast versus ^b	APE ^a	Contrast versus ^b
Model 1.3, (Re-)Employment, (non-workers)						
UPGRADING						
(a) Low	0.23 ***	(c)	0.22 *	(c)	0.26 **	(c)
(b) Medium	0.38 ***	(a) *	0.40 ***	(a) +	0.32 ***	(a)
(c) High	0.33 ***	(b)	0.46 **	(b)	0.28 *	(b)
SIDESTEPPING						
(a) Low	-0.24	(c)	-0.44	(c) +	1.89 **	(c) **
(b) Medium	0.54 ***	(a) *	0.54 ***	(a) *	0.41 ***	(a) *
(c) High	0.29 ***	(b) **	0.32 *	(b)	0.34 ***	(b)
Model 2.3, Upward mobility, (workers)						
UPGRADING						
(a) Low	0.33 **	(c) **	0.50 **	(c)	0.29	(c) ***
(b) Medium	0.50 ***	(a)	0.53 ***	(a)	0.48 ***	(a)
(c) High	0.84 ***	(b) *	0.61 *	(b)	1.06 ***	(b) **
SIDESTEPPING						
(a) Low	1.06	(c)	1.60	(c)	0.35	(c)
(b) Medium	0.09	(a)	0.30 +	(a)	-0.05	(a)
(c) High	0.07	(b)	0.22	(b)	0.03	(b)
Model 3.3, Downward Mobility, (workers)						
UPGRADING						
(a) Low	-0.11	(c)	-0.13	(c) +	-0.06	(c)
(b) Medium	-0.45 ***	(a) *	-0.34 **	(a)	-0.54 ***	(a) *
(c) High	-0.11	(b) +	0.37	(b) **	-0.50 *	(b)
SIDESTEPPING						
(a) Low	-1.30	(c)	-0.88	(c)	-14.41	(c)
(b) Medium	0.07	(a)	0.06	(a)	0.21	(a)
(c) High	0.02	(b)	0.13	(b)	-0.05	(b)

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$. ^a APE=average partial effect, scale in log-hazards. ^b Statistical test whether the difference between respective coefficient is significant.

Upgrading reduces the risk of downward mobility (Model 3.3, Table 7–5) only for initially medium-educated, whereas having has no statistically significant effect for low- and high-educated workers (see Table 7–6 for APEs of adult education). Gender-specific models imply that higher-educated men may even face downward mobility if they upgrade (though not statistically significant). For lower- and medium-educated men, upgrading can reduce the risk of moving downward (statistically significant only for the medium-educated). For women, the results in Table 7–5 suggest the opposite: higher premium for higher- and medium-educated, no premium for low educated workers – but no statistically significant differences in the effects across educational groups. In sum, upgrading seems to prevent downward mobility only for workers in the medium educational group, which have the highest rates of downward mobility in the first place (see Table 7–3). With regard to social inequality, no

straightforward conclusion is possible. Among male upgraders: (1) the contrast between the high- and medium-educated is shrinking; (2) the contrast between the medium- and low-educated is increasing; (3) the contrast between the high- and low-educated remains unchanged. Among female upgraders, for all except for the low-educated risk of downward mobility decreases.

Sidestepping

The interaction effect between sidestepping and initial education indicates that the relative advantage of adult education for (re-)employment chances is more pronounced among the medium-educated than among the higher-educated (Model 1.3, Table 7–5; see Table 7–6 for APEs of adult education). For lower-educated individuals, sidestepping is not beneficial. These results are, however, only true for men. For women, the additional benefit of sidestepping is by far the highest among the lower-educated. With regard to social inequalities, these results suggest an exacerbation effect of sidestepping for men and an equalizing effect for women.

The relative advantage of sidestepping on up- and downward mobility is the highest for the lower-educated (Models 2.3 and 3.3, Table 7–5; see Table 7–6 for APEs of adult education), which would speak to an equalization effect on social inequalities. However, the APEs are not statistically different from zero for either group, and the same is true for the differences in the sidestepping effect between different groups.

7.5.2.4 Returns to adult education and institutional change

Next, I turn to the question of whether adult-education returns vary by historical period in Russia. I find that both upgrading and sidestepping return higher chances for non-working individuals to (re-)enter employment (Model 1.4, Table 7–7). Yet, the Wald test suggests that period-specific effects of adult education do not differ in statistical terms (for upgrading: $p=0.171$, for sidestepping: $p=0.125$). These patterns, however, are different for genders. For non-working men, upgrading pays off in both periods. In turn, sidestepping was effective only during the Soviet period, and the difference between period-specific coefficients is statistically significant ($p<0.01$). Non-working women may exit non-employment through completing upgrading but only during the Soviet period (difference between period-specific effects: $p<0.05$), whereas sidestepping pays off in both periods (difference between period-specific effects: $p=0.506$).

Table 7–7: Piece-wise constant exponential models, interactions between adult education and period (logit coefficients)

	Model 1.4 (Re-)Employment (non-workers)			Model 2.4 Upward mobility (workers)			Model 3.4 Downward mobility (workers)		
	All	Men	Women	All	Men	Women	All	Men	Women
<i>Post-Soviet period (ref. Soviet period)</i>	-0.39***	-0.13*	-0.54***	0.06	0.20*	-0.01	0.34***	0.52***	0.28***
<i>Initial educational level (ref. High)</i>									
Medium	-0.18***	-0.15	-0.31***	-0.49***	-0.38**	-0.65***	0.87***	0.88***	0.73***
Low	-0.10***	-0.14**	-0.12***	-0.46***	-0.41***	-0.51***	0.60***	0.42***	0.63***
<i>Female (ref. Male)</i>	-0.28***			0.12**			0.04		
<i>Period-specific long-term effect of AE (ref. no AE)</i>									
UP, Soviet period	0.29***	0.28***	0.29***	0.45***	0.50***	0.46***	-0.35***	-0.16	-0.48***
UP, post-Soviet period	0.16*	0.24*	0.04	0.27*	0.17	0.32	0.09	-0.11	0.19
SST, Soviet period	0.35***	0.46***	0.24**	0.03	0.14	0.00	-0.13	-0.50	0.05
SST, post-Soviet period	0.16	-0.09	0.35**	0.23	0.53	0.01	0.23	0.53	0.01
<i>(Further variables are omitted)</i>	<i>(see Table E–1, Appendix E–3)</i>			<i>(see Table E–2, Appendix E–4)</i>			<i>(see Table E–3, Appendix E–5)</i>		
Number of observations	44,085	15,474	28,611	102,414	38,741	63,673	8,7859	34,484	53,375
Number of sub-episodes	11,644	4,561	7,083	5,823	2,222	3,601	5,510	2,099	3,411
Number of failures	9,475	3,687	5,788	2,946	1,100	1,846	2,731	868	1,863
Number of individuals	4,550	1,730	2,820	5,823	2,222	3,601	5,998	2,274	3,724

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. AE=adult education, UP=upgrading, SST=Sidestepping. For model fit, see Table E-2, Appendix E.

Upgrading seems to have increased the chances of upward mobility mainly only during the Soviet period (Model 2.4, Table 7–7). However, there is also a non-significant positive trend for the post-Soviet period, and the period differences in the upgrading effect are not statistically significant (for all: $p=0.293$, for men: $p=0.191$, for women: $p=0.540$). For downward mobility (Model 3.4, Table 7–7), upgrading is related to a risk reduction of downward mobility only during the Soviet period (difference between period-specific effects: $p<0.05$) and only for women (difference between period-specific effects for men: $p=0.843$, for women: $p<0.05$). Sidestepping effect does not vary across periods neither for upward mobility (Model 2.4, Table 7–7) nor for downward mobility (Model 3.4, Table 7–7).

7.5.2.5 Overall explanatory power of the models

In the final step, I examined whether adult education contributes to the overall explanatory power of my models by conducting a likelihood ratio test (for a similar approach, see Li et al., 2000). Results are available in Table E–1 in Appendix E. In re-employment, upward-mobility, and in most cases for downward mobility analyses, all specifications of adult education improve the goodness of models significantly. This reveals that adult education has an important impact on career prospects and is an essential instrument for reducing labor market risks.

7.5.3 Robustness checks

7.5.3.1 Modelling finishing adult education with credentials

Several checks for robustness were carried out. For instance, finishing adult education with credentials may convey a stronger signal compared to adult education without a credential. Replicating the models with considering only certified adult education (diploma or related certificate) did not change largely any substantial conclusion. Minor differences were spotted with regard to downward mobility analyses: under the Soviet Union, men may also benefit from upgrading in terms of reduced risks of downward moves if they complete it with a diploma. For women, the differences in a long-term upgrading effect by initial education on downward moves lack overall statistical significance (though the direction of the effect and according interpretation remained the same).

7.5.3.2 Modeling possible selection into adult education

Even though, my analyses accounted for potential selection into adult education based on observables, there might still be confounding factors that are unobserved but might drive selection into adult education and labor market outcomes. Thus, I corroborated my analyses by applying an alternative fixed-effects design which nullifies all influences of time-constant heterogeneity on estimates. More precisely, models have been re-run using stratified Cox regression with robust standard errors (Allison, 1996, 2009; for modeling details, see Brüderl, 2015). Consequently, the effective sample was reduced to more mobile individuals having repeated job episodes.

Regarding re-employment outcomes, fixed-effects results were fairly consistent and effect sizes were even stronger (particularly for women) owing to more heterogeneity controlled for.¹⁰⁵ Regarding the upward mobility outcome, the coefficient for upgrading tend to be positive but lack statistical significance, whereas sidestepping implies a negative statistically significant effect. Since fixed-effect models bias the sample to highly mobile individuals (and particularly under the Communist regime, when overall mobility was highly restricted), it might be that for this individuals upgrading shows no effect since they are generally more prone for a job change. Otherwise, an upward move might purport an educational upgrade due to the structural upgrading in aftermath of the labor market liberalization in Russia.¹⁰⁶ The negative effect of sidestepping on upward mobility might be explained by the fact that the sidesteppers were very mobile before and due to this mobility they opted for sidestepping. This in turn increased their chances for more stable employment. Regarding downward mobility, I found a negative statistically significant effect of upgrading on downward mobility for men; for women, the effect is positive and not statistically significant. Probably, women who are more prone to downward mobility send highly negative signals to employers and thus an upgrading as a signal of potential labor market absenteeism during studies even increases their labor market risks.

¹⁰⁵ Results for interaction effects are not discussed due to low number of cases, and hence highly unreliable estimates and their possible interpretations.

¹⁰⁶ As the period-specific coefficient for upgrading seems to be greater (though both are not statistically significant) for the post-Soviet period, this might provide an indirect evidence for such a speculation.

Note, estimates obtained from fixed-effects models should be interpreted with a caution and several limits of these models in the context of this analysis should be clarified. First, there is no possibility to estimate effects of time-constant independent variables such as initial education or gender, which in our case is crucial. Second, fixed-effect design discards information across individuals and considers only within variation, resulting in higher standard errors. In this regard, analysis of returns to adult education is somewhat challenging and coefficients might be highly unreliable, because of a much greater variation of adult education across individuals and little variation within individuals (few individuals participate in formal adult education repeatedly over the life course). Third, due to modelling specification there might be a high loss of power: (a) individuals with only one event are excluded because of no comparison possibility of this event with another one, and (b) intervals where the first interval is shorter than the previous one will not be considered in the analyses. Consequently, the analytical sample becomes highly selective. Fourth, examining returns to adult education by fixed-effect specification can be only generalized to potential adult learners (average treatment effect only among treated), while for those who would never return to education in the later life course the effect might be completely different. In contrast, my analyses estimated associations between adult education and labor market outcomes, which can be generalized to the whole population. To estimate the true effect of adult education, one would need an experimental design (for more details, see Allison, 1996, 2009).

7.6 Discussion

Economic theories predict positive labor market returns to educational investments in the later life course. On the basis of these theoretical implications, educational policy-makers in the OECD countries and the European Union have proposed “active aging” or the “Lisbon Strategy” (the concept of “lifelong learning”) in order to encourage all potential workers to actively invest in their human capital. Nevertheless, there has been an inconclusive debate in the sociological literature about the effectiveness of adult education for employment outcomes and its significance in terms of social inequality. In this chapter, I have added some insight to the benefits of adult education by examining returns to formal adult education, with Russia’s transitional economy serving as an example. My results generally support economic theories, although returns to adult education strongly vary dependent on the type of adult education and analyzed labor market outcome.

My research considerably contributes to the methodological scope of research on adult-education returns. By accounting for time-constant and time-varying heterogeneity in applying an event-history framework, long-term effects of adult education were examined. By analyzing various outcomes, this study further extends the ongoing debate on the benefits of adult education. I also tested whether adult education has different consequences by gender, previous educational attainment, and institutional context.

The empirical results can be summarized as follows: Upgrading facilitates exiting from non-employment to employment and is an efficient strategy for fostering upward career mobility and preventing mobility downwards. Conversely, sidestepping appears to not always be beneficial. While sidestepping strategy is an efficient to find an employment, it does not pay off in terms of upward mobility and does not work as a safeguard against downward mobility. The results, however, revealed that in some cases upgrading and sidestepping rewards men and women in different ways. For instance, upgrading seems to be an efficient tool against downward mobility risk for women, whereas it does not pay off for men. Sidestepping returns much greater chances for (re-)employment for men than for women. Probably, among upgraders, women are more positively selected than men, while these patterns are turnabout among sidesteppers. Thus, my analyses highlight the significance of gender as a crucial intervening factor when studying adult education.

Can adult education compensate pre-existing inequalities in labor market outcomes? My findings suggest that adult learners enjoy improved career prospects compared with non-participants; therefore, adult education can lessen social inequalities by narrowing the gap between different educational groups. Nevertheless, the necessary condition for such a conclusion would be either equal or higher returns to adult education for initially (educationally) disadvantaged individuals compared with the initially advantaged. The results in my empirical analyses, however, provide no equivocal evidence. For female adult learners, upgrading turns out to be more beneficial for those already advantaged. Sidestepping may have an equalizing effect for women, but only with regard to (re-)employment chances, while it does not vary by initial educational level for occupational mobility. Among men, the findings suggest an equalization effect of upgrading when considering downward mobility, whereas they indicate an exacerbation effect when considering (re-)employment chances and upward mobility (although this is only a trend). Sidestepping may amplify the gap in labor market outcomes between the initially lower- and medium-/higher-educated men. These

results are only evident when we look at (re-)employment chances. Since adult education in many cases either pays off equally for all groups or benefits predominantly those who are initially already advantaged, we may conclude that existent social inequalities endure with or can even be boosted by adult education in Russia.

Another crucial aspect is that the efficiency of adult education seems to have changed since the collapse of the Soviet Union. While results indicate a positive persistent effect of upgrading in Soviet Russia, acquiring this type of adult education seems to be less (if at all) valued in the post-Soviet labor market. This is surprising because obtaining a tertiary degree as an adult has been found to advance individuals' labor market position in modern Russia (Kosyakova et al., 2016; Kosyakova, 2014). On the other hand, lower sample sizes do not allow a firm conclusion on the period-specific differences in the adult education effects. Positive returns of sidestepping on (re-)employment chances are mainly pronounced before the collapse (for all, and men in particular). The best explanation as to why such a small number of adults participate in formal adult education in today's Russia compared with other modern countries is probably the absence of returns to adult education.¹⁰⁷

Coming back to the theoretical inquiries, human capital, signaling, credentialism, and job competition theories (although based on different mechanisms) predicted that adult education should be positively related to employment prospects. It is not straightforward and even challenging to try determining which of those theories works the best; however, differentiating between upgrading and sidestepping might provide some leverage to help conceive which theory is more applicable because these theories offer diverse implications for different adult education strategies.

Human capital theory implied positive returns to upgrading in all cases. For sidestepping, it only implied positive returns in terms of lower risks of downward mobility and better employment chances. My findings generally support these predictions. Signaling theory claimed that both upgrading and sidestepping are profitable, yet with lower effects for the latter. In general, the results confirm that upgrading is more valued than sidestepping,

¹⁰⁷ In 2008, only 2.7% of individuals participated in formal adult education in Russia, whereas 13.3% of individuals in Sweden, about 9% of individuals in Finland and the Great Britain, 6.7% of individuals in Switzerland, and 4.5% of individuals in EC-25 did so (GU VShE, 2010, p. 458).

although sidestepping did not prove to be a good instrument for career prospects, particularly for women. Thus, signaling theory appears to supply a less suitable explanation. The credentialism approach envisaged improved outcomes for upgraders, whereas only already-educationally advantaged sidesteppers were expected to face lower labor market risks. Overall, the first claim found full support, yet there is no support for the second. Either all groups of individuals or the previously least-educated women and medium-educated men are the prominent beneficiaries of sidestepping. Finally, the job competition model forecasted positive effects of upgrading for the previously lower-educated on upward mobility chances, and negative effects of upgrading for the previously higher-educated on downward mobility risks. Differing entirely from our predictions, the opposite relationship was observed. Contentions for sidesteppers, however, found full support: The theory suggested positive effects on upward (“trainability” effect) as well as downward mobility, both presumably in the short run.

Finally, turning to institutional predictions, I found no empirical support for the expectation that adult education returns were more pronounced after the fall of the Soviet Union compared with the previous system. It seems that the strong linkage and coordination between educational and employment systems are associated with high levels of trust. In such social structures, employers *can clearly identify* the “signals” of educational certificates and rely on them (Rosenbaum et al., 1990). Accordingly, adult education may be considered an efficient means for adult learners. In contrast, in the social structures characterized by lower levels of trust (as in post-Soviet Russia), employers *have to rely* on “signals”, while adult education might not necessarily provide a positive signal. Moreover, since formal adult education is usually connected with labor market interruptions, employers might even consider adult learners to be labor market losers and would thus be more reluctant to hire and/or promote them. The negative reputation of evening schools, which usually offer adult-education programs, might have further affected the signals transmitted through adult-education certificates in contemporary Russia (Zajda, 2003).

Nevertheless, from the life course perspective, it would be desirable to cover a longer horizon for the post-Soviet period. If adult education helps in the long run, we might not observe its effects for labor market participants who entered the market shortly before or after the collapse of the Soviet Union. Consequently, the post Soviet effects of adult education might be underestimated. This theory might be further supported by the fact that the most important

reforms in the educational system and particularly with regard to lifelong learning have only been taking place recently in Russia (Khokhlova et al., 2013).

Chapter 8

Conclusions and discussion

8.1 Introduction

Life-course theory views individual life courses as path-dependent trajectories in which previous decisions and experiences shape subsequent decisions and experiences in a cumulative way. In this sense, initial (dis-)advantages may accrue following the logic of the Matthew effect, resulting in an exacerbation of social inequalities over the life course. The extent to which these inequalities accrue is argued to be strongly associated with the institutional arrangements in a given country: Individual life courses are presumed to be influenced by the institutional frameworks in which they are embedded. The empirical evidence provided by cross-national comparisons tends to support this claim. However, these studies are limited to the extent of potential interpretations since empirical analyses generally involve “steady state” societies with highly stable institutional structures. Therefore, in this type of research, only correlations can be predicted.

An alternative avenue in the literature takes a dynamic perspective and investigates social stratification patterns when institutional structures change. In this regard, the context of transition societies should be of particular interest for sociologists. The reason is that the collapse of the Soviet Union and the following shifts in economic, political and social institutional arrangements – which I label as “regime change” – offer an exceptional opportunity to study how patterns of social inequality vary across broader institutional contexts and over time. Given the fact that “institutional context changed suddenly while the persons involved remained the same” (Mayer, 2006, p. 14), this important “natural experiment” allows us to disentangle and to trace the major consequences of the post-socialist transition from individual traits. This notion was also implemented in the present study.

Accordingly, the goal of this thesis was to investigate different aspects of social inequality with a special focus on the changing structures in which these social inequalities are entrenched. The regime change in the aftermath of the post-socialist transformation and the following liberalization of the market enable us to tackle this issue empirically. My theoretical and empirical analyses were structured around three basic research questions: (1)

To what extent did social inequality prevail under the Communist regime? (2) How has post-socialist transition to market economy structured the patterns and the degree of social inequality? and (3) What processes have been driving these changes?

Taking on a life-course perspective, I have studied the case of Russia and addressed these research questions in three stages approaching social inequalities in terms of gender inequalities (and differences) upon labor market entry (Chapter 5), inequalities due to (initial) educational and occupational attainment in access to adult education (Chapter 6), and inequalities due to educational endowments (initial and adult education) in career outcomes (Chapter 7). As these issues have rarely been tackled by previous research, one of my thesis contributions is extending the scope of the literature on transitional societies.

The regime change and its consequences for social inequalities have been addressed in prior research. However, previous studies were often limited in the time span they cover. The research has focused mainly on the short pre-fall period and the first years after transitions, particularly in the Russian case.¹⁰⁸ In contrast, my thesis relied on life-history data that facilitated analyses of the educational and occupational attainment processes over the life course both during and after the socialist regime in Russia. The data go back to January 1965, thereby covering 25 years of state socialism. The post-Soviet period covers the years between 1991 and 2005, with a transition crisis and a rapid recovery period afterwards. A central contribution of my thesis is exploring changes and continuities in the patterns of social inequalities in Russia spanning a much larger observation window of the last four decades.

Beyond the availability of rich and appropriate data, the Russian case is particularly stimulating from a sociological perspective for reasons: First, Russia – as the leading Communist state – represents an ideal model of state socialism. The Communist ideology

¹⁰⁸ For instance, empirical research on social inequalities over time in Slovenia covered the years between 1974 and 1994 (Ivančič, 2000). For Hungary, Estonia, and Russia, the data allowed for considering a longer time-horizon (for Hungary, see Bukodi, 2009, years 1980-1999; for Russia, see, e.g., Gerber & Mayorova, 2010, years 1985-2001; and Gerber, 2003, years 1970-2000; for Estonia, see Täht et al., 2009, years 1980-2001). Another approach used in the transition literature is to compare social outcomes between time points, e.g., one during and one after the socialist regime (see Brainerd, 2000; Mach, 2004; Rona-Tas, 1994; van der Lippe & Fodor, 1998). However, many empirical studies have considered only the first years of transition (for Russia, e.g., Brainerd, 1998 years 1991-1994; Gerber & Hout, 1998 years 1991-1995).

was welcomed and fostered by the Russian population, which, by the introduction of the Bolshevik power, mainly consisted of the working class and peasantry. Communism was organically embraced and embedded into all aspects of economic and social life, particularly due to Russia's cultural and historical heritage (Hedlund, 2013). This was probably also the reason that the socialist order survived for almost 70 years, having a longer life compared with the other Central and Eastern European (CEE) countries (Gerber & Hout, 1995, 1998).

Moreover, Russia's transformation process – as in other CEE countries – involved an immediate dismantling of the socialist institutions and an implementation of capitalist ones with an overarching goal of liberalization reforms and economic efficiency. Nevertheless and in contrast to the forecasts of reformers, the transformation process resulted in an overall economic and social disruption in all countries, particularly in Russia (The World Bank, 2002). Finally, the Russian transformation process compounded reforms of the major formal political and economic institutions while the social sphere and informal structures remained mostly the same (e.g., Frumin et al., 2013; Kapeliushnikov et al., 2011). Correspondingly, an exceptional Russian feature involves a historically pronounced co-existence of formal rules with informal norms and practices (Burawoy & Krotov, 1992; Hedlund, 2013). This ambivalence makes Russia an insightful case for testing the predictions of (market) theories that were developed in Western societies.

This concluding chapter summarizes the main findings of the three empirical chapters, considers their implications for social inequality and changing institutional structures, and discusses their connotation for stratification theory in a broader sense. In the final section, I acknowledge limitations and suggestions for further research.

8.2 Summary of central findings

(Post-)Socialist countries constitute a special case within modern societies in regard to gender relations, particularly because of the proclaimed full gender-equality principles under the socialist regime. In *Chapter 5*, I examined how shifts from a socialist to a post-socialist regime were associated with horizontal gender differences in terms of sectorial distribution and vertical gender inequalities in terms of job authority upon labor market entry in Russia.

My results showed that the school-to-work transition process was not gender-neutral in Russia. In particular, dissimilarity indices as well as sectorial distribution analyses implied that the first job allocation was quite segregated by gender during the Soviet period, and this

increased after the regime change even more. Gender segregation, in turn, is found to drive gender differences in vertical outcomes in terms of wages and job prestige (Katz, 1997; Ogloblin, 2005b). My analyses supported this claim and implied greater net disadvantages for women in entry into authoritative positions in the economic sectors that women were more likely to enter. I further found an overall advantage for female entrants in terms of job authority in their first job, obviously a result of their higher investments in human capital. However, when considering female and male entrants with comparable characteristics, I found a substantial gender gap to the female disadvantage, suggesting lower educational returns for Russian women compared with those of men. In respect to the regime change, the collapse of the Soviet Union increased net gender inequalities to the disadvantage of female entrants in Russia. This expanding net gender gap could be traced back to a growing disadvantage of female entrants rather than to a growing advantage of male entrants.

Chapter 6 focused on adult education as the potential phenomenon of “re-tooling” one’s credentials in response to such dramatic regime changes as those that Russia experienced as well as on systematic social differences in the opportunity to engage in such re-tooling. Adult education may provide an opportunity for educational improvements or re-training in a new field for those with lower educational levels and/or in marginalized labor market positions, thereby reducing initial inequalities in the attainment process. However, the societal function of adult education becomes ambiguous if the predominantly advantaged obtain greater access to adult education. Following this debate, I explored inequality of educational opportunity in the later life course. In other words, I questioned whether there was a social gap in access to adult education for those initially (educationally and occupationally) advantaged and disadvantaged in Russia and the role of the regime change associated with this gap. In addition, I delved deeper into gender aspects with respect to inequality of adult-educational opportunity. Differentiating between upgrading and sidestepping, I anticipated that the driving mechanisms behind these two types of adult education differ depending on specific incentives (“needs”) and impediments (resources and opportunity costs).

My results demonstrated greater access to upgrading for initially educationally disadvantaged individuals, which suggests an equalization effects on social inequalities in Russia. However, greater access to sidestepping for initially educationally advantaged women implies an exacerbation effects, while no effect of initial education for men indicates preservation effects. In regard to the occupational attainment of adult learners, I found occupationally-

advantaged individuals to have more chances to upgrade, while there is no stratification in occupational position for access to sidestepping. In terms of social inequalities, this means an exacerbation effects in the case of upgrading and preservation effects in the case of sidestepping. Nevertheless, the regime change impaired adult educational opportunities for all groups, particularly for those initially (educationally and/or occupationally) disadvantaged. Regarding gender, I found women being less likely to enroll in both types of education during the Soviet period. The post-Soviet collapse condensed males' opportunities for adult education, thereby changing the structure of inequality of adult-educational opportunity between sexes towards a female advantage.

Conforming the predictions of economic theories, lifelong learning should benefit individuals by allowing educationally disadvantaged groups to catch up or to correct initially wrong decisions, thereby improving their career opportunities. Consequently, from a stratification vantage point, participation in adult education may mitigate social distances and inequalities that emerged during schooling and training in the earlier life course. Such societal function should be particularly relevant in transition societies, in which market-based relationships accompanied by individuals' own initiative and effort replaced highly regulated and secure school-to-work transition processes after the collapse of the socialist regime. Scrutinizing this idea, *Chapter 7* questioned whether participation in adult education has a measurable effect on employment patterns and occupational mobility in transition economies. If so, adult education indeed could compensate for existing social inequalities. However, adult education may also exacerbate social inequality if it primarily benefits initially advantaged groups. Another question I posed in this chapter was whether and how returns to adult education changed throughout the collapse of the Soviet Union.

My results support the expectations of the economic model for the Russian case, although returns to adult education vary remarkably by the outcome under study. Correspondingly, both upgrading and sidestepping manifested a potential to lower social inequalities by narrowing the gap between different social groups. However, an in-depth examination of beneficiaries of adult adult education has shown that, in most cases, upgrading enlarged the gap in labor market outcomes between initial (educationally) advantaged and disadvantaged, and particularly among women (for men the same trends, though lower statistical power of the results). Sidestepping either did not vary much by initial educational level or was more profitable for already more-educated individuals, men in particular. Only for women and only

in the case of the (re-)employment chances, sidestepping suggested a reduction of initial (educational) inequalities. Based on this evidence, I conclude that adult education has only limited potential to offset existent social inequalities. In some cases, social inequalities were rather amplified by adult education in Russia. When looking at gender inequalities, upgrading rewards both men and women in improving their career prospects. Yet, in terms of preventing labor market failure, upgrading seems to be more effective for women, while sidestepping tends to benefit mostly men. Turning to the role of the regime change, my analyses stress that before the Soviet regime collapse, adult education was effective in improving labor market position. After the regime change, the economic function of adult education became questionable as returns to adult education attenuated or even vanished.

8.3 Implications of the research

In this section, I highlight the most important findings of my thesis with regard to theoretical progress. Many of these findings may additionally have important policy implications.

8.3.1 Regime change and social inequality

In the market transition debate, the liberalization of markets is argued to reduce social inequalities because competitive market structures remunerate human capital in a more effective way than redistributive structures of state socialism, whereas returns to political power vanish (Cao & Nee, 2005; Nee, 1989, 1991). Therefore, labor market success should be based on merit (and not on ascription, such as gender). On the other hand, the life-course theory implies that abrupt changes in institutional structures are likely to exacerbate inequalities in initial endowments and resources. This growing “social divergence” should be amplified by the transition from an egalitarian and rather homogeneous society to a heterogeneous and individualized one (cf. Mayer, 2006, p. 15). Correspondingly, the overwhelming empirical evidence for transition societies corroborates the conclusion that inequalities across social groups became more pronounced after the socialist period (see Section 2.6 for a review). Following these findings, the global hypothesis of this thesis anticipated that the (net) social gap between various groups of individuals has been opening up or enlarging since regime change in Russia.

Correspondingly, when approaching social inequalities in terms of gender, the results in Chapter 5 imply growing horizontal gender differences and (net) vertical gender inequalities after the collapse of the Soviet Union in Russia. Considering inequality of adult-educational

opportunity (social gap due to educational and occupational attainment in access to adult education), Chapter 6 also pointed out flourishing distances between advantaged and disadvantaged individuals in aftermath of the regime change in Russia. Hence, Chapter 5 and Chapter 6 yielded convincing evidence that the regime change in Russia was associated with negative consequences for social inequalities and thus supports the global hypothesis. Although I did not directly test the regime-change impact on adult education returns for different social groups in Chapter 7,¹⁰⁹ it is unlikely that adult education became an effective tool for reducing social inequalities after the regime change. On the one hand, adult education was found to be mostly beneficial either for all or for predominantly (educationally) advantaged groups. On the other hand, I found diminished (if any) returns to adult education after the Soviet regime collapse. From stratification point of view, these results imply that adult education in Russia became a less efficient instrument for coping with existing inequalities after the regime change (if it was efficient at all), which is also in line with the global hypotheses of this thesis.

8.3.2 Market Transition Debates

My empirical findings also have important implications for the debates on the market transition. Since liberalization reforms should have invoked higher value of merit from the labor market, the Market Transition Theory (MTT) forecasted a lower reliance upon ascription in the hiring processes (among other things) (Nee & Matthews, 1996). These expectations found no support in Chapter 5 as gender (and not solely merit) influenced the school-to-work transition in Soviet Russia and became an even more important factor in the job allocation process after liberalization reforms. Furthermore, following the MTT, the growing value of merit should have amplified the demand for education and thus also the demand for adult education. Although evidence in the literature for credential inflation supported this statement (e.g., Kapeliushnikov, 2008; OECD, 2012), I found no support of this prediction in my analyses in regard to adult education; the results in Chapter 6 instead indicated lower incidences of enrollment in formal schooling in the later life course after the Soviet regime collapse. Finally, the MTT stressed growing returns to education because the

¹⁰⁹ Mainly due to low incidences of adult education, the inclusion of the three-way interaction effects between adult education, initial educational levels, and the post-Soviet period would result in high standard errors, which, in turn, would impede drawing and justifying any firmer conclusions.

market forces reward merit more strongly than the redistributive system (Nee, 1989). At least in terms of adult education, the MTT was wrong – the results in Chapter 7 emphasize that adult education in Russia became less effective for career prospects, and in some cases, this implied no returns to human capital investments if the education was completed in the adult life course.

8.3.3 Importance of the structural and cultural context

Turning to the general research questions, my results conform to the empirical findings that despite the ideological principles of the Communism in respect to the equalization of life-course chances, Soviet Russia could be characterized as a reasonably stratified society. The transition to a liberalized economy, however, not only worsened the overall standards of living (Gorodnichenko et al., 2010) but also increased existing social inequalities. In this regard, my thesis evinces the relevance of the contextual embeddedness of the stratification process and contributes to our understanding of the role of institutional and cultural factors in the life-course trajectory. In the following, I emphasize institutional and cultural factors that were presumably crucial in these processes.

Four peculiar developments in the aftermath of the regime change in Russia likely contributed to growing social inequalities in gender relations. First, the weakened link between the educational system and the labor market might have led to a stronger selection based on ascriptive characteristics (such as gender) on the employers' side. Such a selection process evidently influenced female entrants more strongly than male entrants. Second, the regime change induced the reinforcement of cultural gender stereotypes on professions and domestic roles caused by growing uncertainty and emerging new forms of business ethics and typical frames of professional interactions ("Wild West"-like effects). Third, family policies introduced after the collapse of the Soviet Union reinforced traditional-like family formation patterns and encouraged mothers to stay at home. In this sense, the lack of state support (reduced childcare services) together with longer maternity leave might influence women's chances of attaining high-status jobs and contribute to their status as a "risk factor" for employers and/or encourage a self-selection of women into jobs that require less commitment, effort, and upgrading. Fourth, growing informal relationships in the post-Soviet Russia (that has been widely documented by the empirical literature, see Guariglia & Kim, 2006; Johnson, Kaufmann, McMillan, & Woodruff, 2000; Johnson, Kaufmann, & Shleifer, 1997; B.-Y. Kim, 2002) rose the importance of social capital and ties for occupational

success (Yakubovich & Kozina, 2000; Yakubovich, 2005). These developments obviously impaired females labor market opportunities, since women have fewer access to (high-quality) ties and social networks in Russia (Ashwin & Yakubovich, 2005; Gerber & Mayorova, 2010).

The worsened societal function of adult education after the collapse of the Soviet Union – which was revealed in Chapter 6 and Chapter 7 – was likely a result of the changes in the educational sphere. First, the state disappeared as a main coordinator between educational and employment systems, and the education-occupation link vanished. Consequently, returns to adult education investments became insecure and vague, which may explain my findings for low returns to adult education (or their absence) after the regime change in Russia. In turn, this issue obviously increased the reluctance of both employers and employees to invest in adult education despite the growing need for new skills and knowledge due to globalization and the intensification of competition. Moreover, the state disappeared as a major sponsor of educational investments, particularly for learners outside of the regular age, thereby leading to the “privatization” of risks. This privatization obviously increased the stratification of adult education in economic terms. Growing (labor market) uncertainty in the aftermath of the regime change played no less important role. On the one hand, it might have deterred individuals from returning to time- and money-consuming formal schooling. On the other hand, these uncertain environment might have blurred signals of (adult) education, giving room to other factors in determining hiring processes: “Supply and barter networks, access to locally scarce goods, connections with customs officials and local politicians, skill in the military and pleasure-providing arts – these, not education, are the most important forms of capital in the new Russian market” (Gerber & Hout, 1998, p. 37).

8.3.4 Gender

Throughout my thesis, I acknowledged the importance of gender in the process of educational attainment and careers in a tremendously changing society. Women and men indeed face distinct chances and opportunities during their life courses, and, as my thesis has revealed, institutional and cultural arrangements shape these chances and opportunities.

In the early labor market careers (Chapter 5), Russian women make a series of “right” choices. They invest in education, they choose branches in the economy with many authoritative positions and as a consequence, they are often found in such positions in their

first jobs. But nevertheless, something goes “wrong”: compared to men they have lower returns to initial education. As potential explanations for females’ structural inability to translate higher educational attainment into better occupational opportunities, I proposed females’ educational and occupational choices oriented more towards a sound work-family balance, employers’ discrimination, and/or lower access to social networks and ties.

These patterns were likely to even worsen during the post-Soviet period, since I found that the gender gap for job authority has enlarged, owing to reduced chances of female entrants for job authority (Chapter 5). Also in the later career phases, women were hit by Russia’s transition to a liberalized economy more than men (Chapter 7). For instance, previous rather equal opportunities to find a (new) job during the Soviet period turned to unequal opportunities disadvantaging women in the post-Soviet Russia. Similarly, the formerly higher upward career-mobility of women diminished, thereby eliminating advantages women enjoyed in the Soviet era. Yet, women also benefited from the transition in Russia. Under the Soviet regime, women had much higher risks of downward career-mobility than men. This changed totally because men were hit severely by liberalization reforms; as a consequence, the gender gap in downward mobility even reversed. Also gender differences in adult education opportunities – women participated less than men in the Soviet Russia – turned around (Chapter 6). However, this change was brought out by a reduced male participation in adult education rather than a growing female participation.

Probably, the growing labor market disadvantages (in the early and late career stages) due to the Soviet Union collapse inclined women to keep seeking for educational upgrading or sidestepping in the post-Soviet period (Chapter 6). One could expect that the post-Soviet female edge in adult education enrolment points to women’s better opportunities for improving labor market positions. Looking at returns to adult education, in most cases men and women did not differ (Chapter 7). Benefits of upgrading were similar by gender for (re-)employment and upward mobility chances. Only in regard to downward mobility risks, upgrading paid off for women and not for men. Women benefitted from sidestepping, however, only little (if at all) in the labor market.

With regard to gender, one could conclude that women experienced a loss in labor market outcomes relative to men over the Soviet Union collapse. They lost at the labor market entry and also in later stages of the career. It seems that women structurally responded to this via a participation in adult education. Nevertheless, it should be noted that formal adult education

is quite selective in participation and involves monetary and time investments. Hence, it is questionable whether women have really succeeded in compensating their relative losses after the collapse of the Soviet Union.

Chapter 5 has further insights for gender relations in a broader sense. Following the “homosocial reproduction” argument (Kanter, 1977), individuals give preference to ascriptively similar others and gender inequalities in job authority might hence foster the persistence of further labor market related inequalities between the sexes (see Elliott & Smith, 2001 for empirical support). Thus, studying the school-to-work stage may enhance our knowledge of when and why gender inequalities arise. Gender inequality in access to authority positions might also shape gender inequality within the family. Since authoritative positions are more demanding in terms of overtime and flexibility (Abendroth, Maas, and van der Lippe 2013), higher male employment levels in these jobs might cause lower male involvement in household chores. Correspondingly, my study improves our knowledge on the arrangements of labor divisions in society as a whole (Yaish and Stier 2009). Both issues become of particular relevance given (a) the enormous achievements of Communism in terms of female employment and female advances in education (Gerber, 2003; McAuley, 1981) as well as (b) societal changes linked to a “release” of Russian women from their labor market duties and that send them back to their traditional duties and positions in the family. Hence, the existence of gender inequalities between similarly equipped men and women stresses the fact that it is not enough to focus only on the quantitative dimension of the gender issue.

8.3.5 Matthew effects

What is more, this thesis illustrates a remarkable case for Merton’s idea of a Matthew effect. First, individuals with higher initial educational levels have better prospects for good labor market entry, *ceteris paribus* (Chapter 5). Second, these higher credentials fetch more returns in the labor market (Chapter 7). Third, although individuals with lesser credentials to begin with are more likely to upgrade their initial level in the later life course (Chapter 6), the relative advantage of adult education appears to be lower for them compared with upgraders with more credentials to begin with (Chapter 7). Fourth, upgrades tend to be individuals who already occupy better positions in the labor market (Chapter 6), and upgrading can improve career prospects further and reduce various labor market risks (Chapter 7). Fifth, it seems that an advantaged family background provides an additional direct advantage in the later life course in adult education access (Chapter 7). Sixth, while there is some evidence that initially

lower-educated individuals might benefit more strongly from adult education in form of sidestepping (Chapter 7), they seem to have fewer chances for enrollment in sidestepping (Chapter 6). Altogether, alongside status attainment process, we observe the remarkable accumulation of educational and occupational (dis-)advantages across the individual life course in which the already advantaged gain further ground.

8.3.6 Education as a life-long process

My thesis contributes to sociology of education by separating between educational upgrading and sidestepping – two adult education strategies with very different potentials for labor market outcomes (Chapter 6 and Chapter 7). The distinction between upgrading and sidestepping is an original contribution having been barely addressed by previous research (with exception of Li et al., 2000; Vono de Vilhena et al., 2016), particularly with regard to the social stratification of those strategies. This distinction opens up new avenues for re-considering what we (do not) know about educational re-entries in later career stages.

Educational upgrading provides a handle to built up on previously attained human capital and to improve initial skills and knowledge. The potentials of upgrading are obvious: A higher educational level signals productivity and motivation rendering an applicant more attractive for employers, which may result in higher wages and salaries, higher-ranked positions, and better promotion opportunities. In turn, sidestepping implies a sort of depreciation of initial skills, since by acquiring new qualification, older skills become less relevant and less useful. In this sense, sidestepping is a more risky strategy also because learning in older ages is less efficient than earlier in life (Heckman, 2006). Nevertheless, sidestepping could be promising to find a new job or to reduce labor market risks by switching to another occupation or branch. Having said that, particularly those who experienced labor market failure will be mostly likely to adopt a sidestepping strategy. Elaborating on characteristics of adult learners, I provided a theoretically-driven discussion based on the perpetuation of initial credentials and occupational attainment which (jointly) were expected to be the main driving forces but also constraints for opting for upgrading or sidestepping.

Beyond this, my study of adult education stresses that adult education indeed needs to be examined and understood as part of individuals' educational career and life-long learning process. In this context, Chapter 6 and Chapter 7 highlight the complexity of adult education related to individual education and work experience during times of societal changes. Beyond

the case of Russia, this study is also an example of and provides some direction for referring to educational career patterns developed during post-secondary education. Furthermore, relating upgrading and sidestepping to changes in political regime is appealing as it can have broad implications for understanding the dynamics in adult education due to macro changes in society. Finally, my study contributes to a better understanding of the link between the educational system and the labor market in Russia, where formal arrangements often deviate from practical experience, thereby obscuring theoretical predictions of the institutional literature (Kapeliushnikov et al., 2011).

8.4 Limitations and suggestions for future research

In this final section, I address the limitations of my thesis that should also guide further research. First of all, I acknowledge potential recall bias, which is a common problem of the retrospective data. However, the period I cover is connected with important societal events that are likely to enhance the accuracy of recall. Furthermore, recall inaccuracy should be offset by rather stable career patterns during the Soviet period. Although the post-Soviet period implies more volatile career patterns, reported events are more recent and should hence contain less errors. The underreporting of sensitive information, such as unemployment, might be a further issue of the retrospective data, though this information is less relevant to my analyses. Given the higher risks of mortality, my results might be slightly biased in favor of higher-educated individuals (Bessudnov, McKee, & Stuckler, 2011; Bessudnov, 2011). A potential solution to overcome issues linked to the retrospective data would be to collect prospective data. Unfortunately, there is no such data available for Russia that would also cover both the Soviet and post-Soviet periods.

The second issue refers to the limited information available in the used data. Inter alia, the data lack information on income or major job characteristics that would allow for an approximation of the life-course income trajectory as well as a detailed occupational status. For the gender inequality study, further information on individuals' view of gender norms and roles would be essential to address the issue of inequality versus preferences. In terms of education, the field of study would be crucial for a better definition of upgrading and sidestepping in adult education strategies. Finally, qualitative data on the personal experience of the regime change would give direct insights into the link between macro-level changes and micro-level outcomes.

Third, the empirical analyses in my thesis – as in most analyses of such type – are limited in terms of strict causality of the “regime change” variable, which would be nonsensical to postulate on substantial grounds. Instead, I studied change along a sharp transition process that took place in a unique historical context. Observed associations mirror a large number of changes and continuities in institutional and cultural spheres as well as individual adaptations to and maneuvering in the given context. Notably, Russia – as many other post-Socialist countries – went through several periods of transformation with a deep economic and political crisis in the 1990s and rapid recovery in the following decades. Therefore, it might be that it is not the collapse of the Soviet Union *per se* that shaped social inequalities, but possibly the dramatic economic decline. To disentangle the potential “causal” impact of the Soviet Union collapse, it would be desirable to cover a longer horizon, including the financial crisis at the end of 2000s, and to account for different periods during the Soviet and post-Soviet eras. More practically, available longitudinal panel studies (e.g., Russia Longitudinal Monitoring Survey) could make additional investments in a specific module that collects life-history data in addition to that gathered annually (a prospective one).

Although my thesis provides important implications for transition societies, it is difficult to claim that the results found here can be generalized for all post-socialist countries. Correspondingly, replication studies for other post-socialist countries experiencing a regime change might shed more light on the issues of the institutional and cultural impact on social inequalities. In this context, future research should also take on a comparative perspective and delve into the question of whether there is a convergence on a specific regime type in the logic of the “variety of capitalism” approach (Esping-Andersen, 1990) or a path-dependency due to the socialism and whether post-socialist societies are on their way to their own regime types (see, e.g., Fenger, 2007). Currently, there is no available data that would enable addressing the regime change impact on social inequalities – as examined here – through a comparative lens. However, using appropriate and comparable measurements and analytical methods, researchers could scrutinize the available life-history data for countries with socialist past, e.g., German National Education Panel Survey Study and the Estonia Social Survey. Other aspects of social stratification (such as race, age, and health) and other life-course stages (such as early educational careers, later labor market careers, retirement decisions, and fertility behavior) could also be studied if the data allow.

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Appendices

Appendix A Chapter 3

Table A–1: Russian educational system – ISCED (1997) correspondence table

ISCED97 level	Russian equivalent
<p><i>ISCED 0: Pre-primary education</i></p> <p>Programmes at level 0, (pre-primary) defined as the initial stage of organized instruction are designed primarily to introduce very young children to a school-type environment, i.e., to provide a bridge between the home and a school-based atmosphere. Upon completion of these programmes, children continue their education at level1 (primary education).</p>	<p><i>Pre-primary (pre-school) education</i></p> <p>This stage in Russia is not included into the education system: this stage is not mandatory for continuing education at the following level. However, it is organized usually on the basis of an educational institution and is intended to prepare very young children for school.</p>
<p><i>ISCED 1: Primary education</i></p> <p>First-stage education. Programmes at level 1 are normally designed on a unit or project basic to give students a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music. In some cases religious instruction is featured.</p>	<p><i>Primary education</i></p> <p>In Russia this educational stage (grades 1–4) is the first level of mandatory education in educational institutions. This stage also covers students in preparatory classes, which are considered to be “pre-primary” in the ISCED system, as level 0. Successful completion of this stage is sufficient for the primary education qualification. The data presented in this thesis and for this stage does not include special (correctional) educational institutions and classes for students with special needs (e.g. disabled student, children with deviant behavior) or evening schools.</p>
<p><i>ISCED 2: Lower secondary education</i></p> <p>Second-stage education, first level of secondary education. The contents of education at this stage are typically designed to complete the provision of basic education which began at ISCED level 1. In many, if not most countries, the educational aim is to lay the foundation for lifelong learning and human development on which countries may expand, systematically, further educational opportunities. The programmes at this level are usually on a more subject-oriented pattern using more specialized teachers and more often several teachers conducting classes in their field of specialization. The full implementation of basic skills occurs at this level. The end of this level often coincides with the end of compulsory education where it exists.</p>	<p><i>Basic secondary education</i></p> <p>This is the second stage of the compulsory education system (5–9 grades of regular schools); completion of this stage means completion of compulsory school education and is sufficient for basic secondary education qualifications. Qualification awarded: Attestat 1.</p> <p>The data presented in this thesis and for this stage does not include special (correctional) educational institutions and classes for students with special needs (e.g. disabled student, children with deviant behavior) or evening schools.</p>

Table A-1: Continued

ISCED97 level	Russian equivalent
<p><i>ISCED 3: Upper secondary education</i> Third-stage education. This level of education typically begins at the end of full-time compulsory education for those countries that have a system of compulsory education. More specialization may be observed at this level than at ISCED level 2 and often teachers need to be more qualified or specialized than for ISCED level 2. The entrance age to this level is typically 15 or 16 years. The educational programmes included at this level typically require the completion of some 9 year of full-time education (since the beginning of level 1) for admission or a combination of education and vocational or technical experience and with as minimum entrance requirements the completion of level 2 or demonstrable ability to handle programmes at this level.</p>	<p><i>Full secondary education (grades 10–11/12) and primary vocational education</i> Full secondary education (corresponds to ISCED 3A) is feasible in gymnasium, lyceum and secondary school; awarded by Attestat 2 of Maturity (zrelost). Primary vocational education (corresponds to ISCED 3C) is included in this stage, regardless of whether student has a certificate of secondary (full) education; feasible in specialized school (uchilische), awarded by: (a) one-year duration: certificate with worker's qualification; (b) two-year duration: Attestat 2 of Maturity (zrelost), confirms upper secondary education and certificate with worker's qualification.</p>
<p><i>ISCED 4: Post-secondary non-tertiary education</i> Fourth-stage education, post-secondary non-tertiary. ISCED 4 captures programmes that straddle the boundary between upper secondary and post-secondary education from an international point of view, even though they might clearly be considered as upper-secondary or post-secondary programmes in a national context. ISCED 4 programmes can, considering their content, not be regarded as tertiary programmes. They are often not significantly more advanced than programmes as ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The programme content can be expected to be more specialized or detailed and the applications to more complex in some cases than those offered at the upper-secondary level.</p>	<p>This stage can include professional training course (computers, accounting, secretarial, etc.) which usually represent non-formal education. This stage may also include preparatory courses, organized for the purposes of entering HEIs. The available statistics do not fully indicate the relevant data on this stage of education. This type of education has duration of one year and awarded by certificate with worker's qualification.</p>
<p><i>ISCED 5b: Tertiary-type B education</i> Fifth-stage education, first level of tertiary education, 5 B programmes. This level consists of tertiary programmes having an educational content more advanced than those offered at level 3 and 4. The content of ISCED level 5B programmes is practically oriented/occupationally specific and is mainly designed for participants to acquire the practical skills. Programmes in this level do not lead directly to an advanced scientific qualification, and cover practical (technical) professional fields.</p>	<p><i>Secondary professional education / tertiary education of non-university level</i> Secondary professional education based on upper secondary level (11 years); ensures receipt of secondary professional schools and professional technical colleges and secondary professional branches of HEIs; awarded by Specialist's diploma 1.</p>
<p><i>ISCED 5a: Tertiary-type A education</i> Fifth-stage education, first level of tertiary education, 5 A programmes. ISCED level 5 A programmes that are largely theoretically based and are intended to provide sufficient qualification for gaining entry into advanced research programmes and profession with high skills requirements.</p>	<p><i>Higher professional education / tertiary education of university level</i> Education in different types of HEIs (institutes, academies, universities). So definition of tertiary (higher) education in the Russian educational framework is narrower than in OECD countries and in fact covers only ISCED 5a; and does not include ISCED 5b (which corresponds to the secondary professional education) and ISCED 6 (which corresponds to the postgraduate education).</p>

Table A–1: Continued

ISCED97 level	Russian equivalent
<i>ISCED 6: Advanced research programmes</i> Sixth-stage education, second level of tertiary education. This level is reserved for tertiary programmes which lead to the award of an advanced research qualification. The programmes are therefore devoted to the advanced study and original research and are not based on course-work only.	<i>Post-graduate education</i> Post-graduate studies, including aspirantura (candidate of sciences) (Equivalent of Ph.D. studies) and Doctorate's programmes

Note: Adapted from GU VShE (2010), ISCED 1997 MAPPINGS (2012), OECD (2007)

Appendix B Chapter 4

Education attainment level refers to the highest educational attainment level in each month. We constructed this variable with information on (1) kind of studies the respondent received, (2) beginning and end of education episode, and (3) presence of diploma or certificate of education by the end of the episode. Full-time professional training courses at the workplace or apart from job, as well as short-term professional training courses were not considered because such courses do not lead to higher educational attainment level.

1st. coding step: construction of categorical variable with kind of studies the respondent received (based on the original EES questionnaire)

43	Secondary school - 10–11 years
44	Professional education: vocational college, factory-and-work college – without secondary education
47	Vocational college with secondary education, technical college or lyceum, 2–3 years of studies
48	Secondary special: technical, medical, musical, teacher training, arts college or school, 3–4 years after unfinished secondary school
49	Secondary special: technical, medical, musical, teacher training, arts college or school, at least 2 years after finishing secondary school
50	Higher: university, institute, or academy: specialist, B.A., M.A.
51	Postgraduate education: Ph.D. (Cand. Sc., Dr. Sc.), postgraduate military academy

2nd. coding step: 8 time-dependent dummy variables for different received degrees

Incomplete_secondary	= 1 for each respondent in each month
Complete_secondary	= 1 if (diploma = 1 & studies = 43) if (diploma = 1 & studies = 47) if (diploma = 1 & studies = 48) = 1 if studies >= 49 & studies <= 51
Vocational_long	= 1 if (diploma = 1 & studies = 47)
Vocational_short	= 1 if (diploma = 1 & studies = 44)
Professional_long	= 1 if (diploma = 1 & studies = 48)
Professional_short	= 1 if (diploma = 1 & studies = 49)
Higher	= 1 if (diploma = 1 & studies = 50) (studies = 51)
Post-graduate	= 1 if (diploma = 1 & studies = 51)

3rd. coding step: as soon as a dummy equaled 1, we used Stata carryforward command to code all following spells to 1.

4th. coding step: step-by-step reconstruction of the highest level attained from the longitudinal perspective; one categorical variable, 8 categories

1 Incomplete secondary	= 1 if <u>incomplete_secondary = 1</u> & complete_secondary = 0 & vocational_long = 0 & vocational_short = 0 & professional_long = 0 & professional_short = 0 & higher = 0 & post-graduate = 0
2 Incomplete secondary with vocational	= 2 if <u>incomplete_secondary = 1</u> & complete_secondary = 0 & (vocational_long = 1 vocational_short = 1) & professional_long = 0 & professional_short = 0 & higher = 0 & post-graduate = 0
3 Complete secondary	= 3 if <u>complete_secondary = 1</u> & vocational_long = 0 & vocational_short = 0 & professional_long = 0 & professional_short = 0 & higher = 0 & post-graduate = 0
4 Complete secondary with vocational	= 4 if <u>complete_secondary = 1</u> & (vocational_long = 1 vocational_short = 1) & professional_long = 0 & professional_short = 0 & higher = 0 & post-graduate = 0
5 Secondary professional, based on incomplete secondary	= 5 if <u>professional_long = 1</u> & professional_short = 0 & higher = 0 & post-graduate = 0
6 Secondary professional, based on complete secondary	= 6 if <u>professional_short = 1</u> & higher = 0 & post-graduate = 0
7 Higher	= 7 if <u>higher = 1</u> & post-graduate = 0
8 Post-graduate	= 8 if <u>post-graduate = 1</u>

Appendix C Chapter 5

Table C–1: Comparison of model specifications (N = 5,825)

Model specification		2 periods				4 periods			
		LL	DF	AIC	BIC	LL	DF	AIC	BIC
(2)	G, P	-2476.11	3	4958.21	4978.22	-2463.81	5	4937.62	4970.97
(3)	G, P, G × P	-2475.13	4	4958.26	4984.94	-2461.27	8	4938.53	4991.89
(4)	G, P, E	-1776.09	7	3566.18	3612.87	-1771.03	9	3560.06	3620.09
(5)	G, P, G × P, E	-1774.15	8	3564.29	3617.65	-1766.44	12	3556.88	3636.91
(6)	G, P, E, G x E	-1770.36	11	3562.72	3636.09	-1765.38	13	3556.76	3643.47
(7)	G, P, E, S	-1587.84	19	3213.68	3340.41	-1585.10	21	3212.19	3352.26
(8)	G, P, G × P, E, S	-1585.12	20	3210.24	3343.64	-1579.98	24	3207.96	3368.04
(9)	G, P, E, G x E, S	-1582.45	23	3210.90	3364.31	-1579.86	25	3209.71	3376.46
(10)	G, P, E, S, G × S	-1579.42	31	3220.83	3427.60	-1576.73	33	3219.47	3439.57
(11)	G, P, E, S, C	-1577.65	27	3209.29	3389.38	-1575.42	29	3208.83	3402.26
(12)	G, P, G × P, E, S, C	-1574.75	28	3205.51	3392.27	-1569.96	32	3203.92	3417.35
(13)	G, P, E, G × E, S, C	-1572.58	31	3207.16	3413.93	-1570.44	33	3206.88	3426.99
(14)	G, P, E, S, G × S, C	-1568.90	39	3215.79	3475.92	-1566.69	41	3215.38	3488.84

Note: Linked GGS (2004) and EES (2005) data; own calculations. Model specification: G=Gender (female), P=Period of entry, E=educational level, S=Sector of economy; C=controls (presence of children, private sector, rural area, self-employed, a family worker, or farmer, approximated education, missing for private sector, for rural area, lived in Moscow or St. Petersburg at the time of the GGS survey); interaction indicated by ×.

Table C–2: Comparison of LR improvement test (N = 5,825)

		2 periods			4 periods	
		Δ	LR χ^2	<i>p</i>	LR χ^2	<i>p</i>
(1)	G	(base)	12.83	0.003	12.83	0.003
(2)	G, P	(1)	8.69	0.003	33.28	0.000
(3)	G, P, G × P	(2)	1.95	0.163	5.09	0.165
(4)	G, P, E	(2)	1,400.03	0.000	1,385.56	0.000
(5)	G, P, G × P, E	(4)	3.89	0.049	9.19	0.027
(6)	G, P, E, G x E	(4)	11.46	0.022	11.30	0.023
(7)	G, P, E, S	(4)	376.50	0.000	371.87	0.000
(8)	G, P, G × P, E, S	(7)	5.44	0.020	10.23	0.017
(9)	G, P, E, G × E, S	(7)	10.78	0.029	10.48	0.033
(10)	G, P, E, S, G × S	(7)	16.85	0.155	16.72	0.160
(11)	G, P, E, S, C	(7)	20.39	0.009	19.36	0.013
(12)	G, P, G × P, E, S, C	(11)	5.78	0.016	11.91	0.012
(13)	G, P, E, G × E, S, C	(11)	10.13	0.038	9.95	0.041
(14)	G, P, E, S, G × S, C	(11)	17.50	0.131	17.45	0.133

Note: Linked GGS (2004) and EES (2005) data; own calculations. Model specification: G=Gender (female), P=Period of entry, E=educational level, S=Sector of economy; C=controls (presence of children, private sector, rural area, self-employed, a family worker, or farmer, approximated education, missing for private sector, for rural area, lived in Moscow or St. Petersburg at the time of the GGS survey); interaction indicated by ×; Δ = comparison model.

Table C–3: Further effects from regression models 5, 6, 7, and 8 in Table 5–5 and Table 5–6 (logistic regression model on entry into authoritative position)

continued	Model 5	Model 6	Model 7	Model 8
<i>Presence of children (ref. no children)</i>	0.13	0.15	0.13	0.14
<i>Private sector (ref. public sector or mixed)</i>	-0.20	-0.23	-0.19	-0.20
<i>Rural area (ref. urban area)</i>	0.29**	0.29**	0.28**	0.29**
<i>Self-employed, family worker, or farmer (ref. not self-employed, family worker, or farmer)</i>	1.19**	1.16**	1.22**	1.25**
Controls				
<i>Approximated education</i>	0.30	0.32	0.26	0.28
<i>Missing for private sector</i>	-1.44	-1.43	-1.38	-1.46
<i>Missing for rural area</i>	-0.17	-0.20	-0.16	-0.13
<i>GGs residence area in Moscow or St. Petersburg</i>	0.04	0.05	0.05	0.03

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

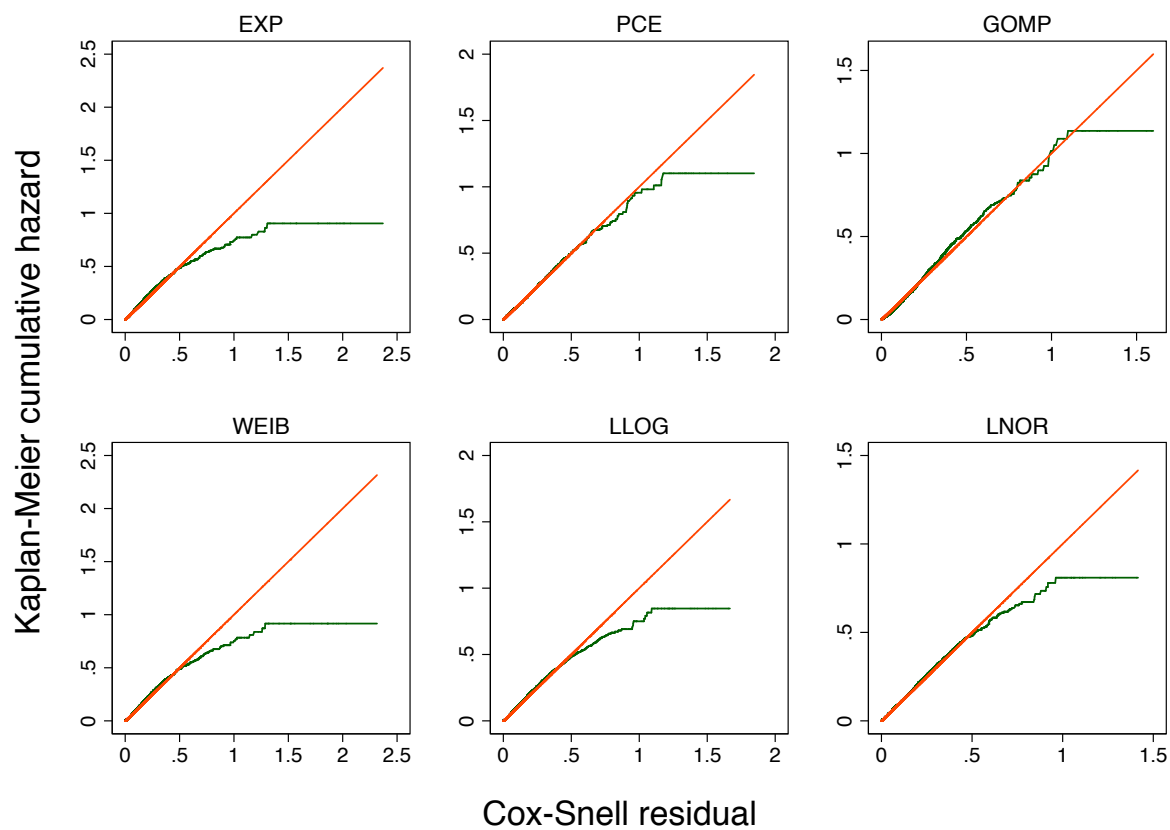
Table C–4: Gender gap in entry into authoritative versus non-authoritative position by period of labor market entry, educational level, and branch of economy

	Female APE ^a	<i>z</i>	<i>p</i>
<i>Model 6: female × post-Soviet labor market entry</i>			
Soviet labor market entry	-3.50	-3.01	0.003
Post-Soviet labor market entry	-6.77	-5.09	0.000
<i>Model 7: female × educational level</i>			
Incomplete secondary	-1.19	-1.01	0.313
Lower vocational	-0.71	-0.52	0.604
Secondary completed	-2.40	-1.81	0.071
Secondary professional	-5.08	-1.98	0.048
Higher	-22.15	-5.88	0.000
<i>Model 8: female × branch of industry</i>			
Agriculture	-1.62	-0.74	0.460
Mining	-8.46	-1.51	0.130
Manufacturing	-3.01	-1.81	0.071
Power industry	-7.13	-1.11	0.267
Construction	-2.50	-0.74	0.458
Trade and consumer services	-7.12	-2.24	0.025
Transport and communication	-4.19	-1.36	0.173
Finance services	-17.44	-1.19	0.235
State services	-12.62	-4.07	0.000
Health	-6.20	-1.41	0.158
Education	-15.90	-2.57	0.010
Other communal, social, and personal services	6.21	1.31	0.190
Other or miss	-4.90	-0.86	0.392

Note: Linked GGS (2004) and EES (2005) data; own calculations. ^a APE = average partial effect, scale in percentage points.

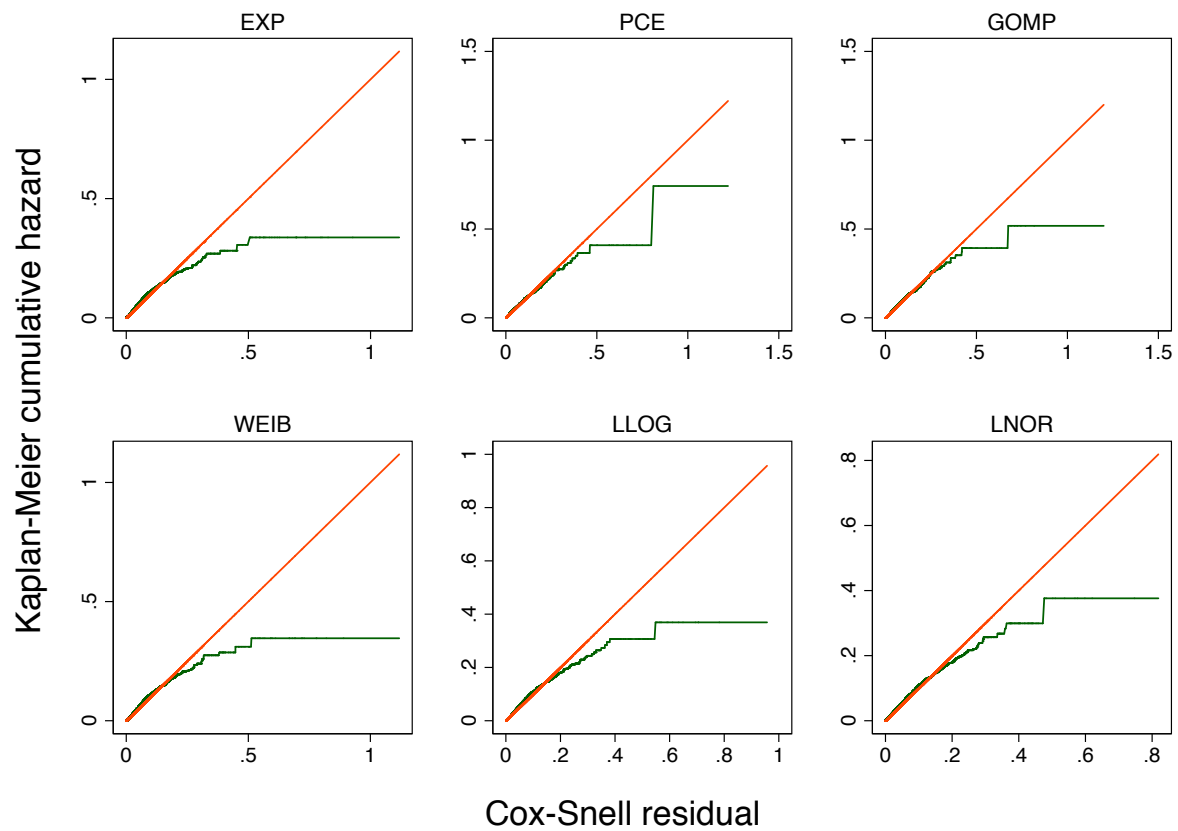
Appendix D Chapter 6

Figure D–1: Entry into upgrade: plots of pseudo-residuals based on the Cox and Snell (1968) approach



Note: Linked GGS (2004) and EES (2005) data; own calculations. EXP=Standard exponential; PCE=Piecewise constant exponential; GOMP=Gompertz; WEIB=Weibull; LNOR=Log-normal; LLOG=Log-logistic.

Figure D–2: Entry into sidestep: plots of pseudo-residuals based on the Cox and Snell (1968) approach



Note: Linked GGS (2004) and EES (2005) data; own calculations. EXP=Standard exponential; PCE=Piecewise constant exponential; GOMP=Gompertz; WEIB=Weibul; LNOR=Log-normal; LLOG=Log-logistic.

Table D–1: Likelihood ratio improvement test, compared to standard exponential model

	Upgrading (N=101,544)	Sidestepping (N=101,921)
LR = 2*((PCE) - (EXP))	528.17	148.18
LR = 2*((GOMP) - (EXP))	277.12	74.27
LR = 2*((WEIB) - (EXP))	1.45	1.28
LR = 2*((LNOR) - (EXP))	47.26	27.74
LR = 2*((LLOG) - (EXP))	77.81	76.05

Note: Linked GGS (2004) and EES (2005) data; own calculations. EXP=Standard exponential; PCE=Piece-wise constant exponential; GOMP=Gompertz; WEIB=Weibul; LNOR=Log-normal; LLOG=Log-logistic.

Table D–2: Akaike’s information criterion and Bayesian information criterion

Upgrading (N = 101,544)				
	LL	DF	AIC	BIC
EXP	-4602.03	27	9258.06	9515.32
PCE	-4337.95	35	8745.89	9079.38
GOMP	-4463.47	28	8982.94	9249.73
WEIB	-4601.30	28	9258.60	9525.39
LNOR	-4578.40	28	9212.80	9479.59
LLOG	-4563.12	28	9182.24	9449.04
Sidestepping (N = 101,921)				
	LL	DF	AIC	BIC
EXP	-2220.92	27	4495.84	4753.21
PCE	-2146.83	35	4363.66	4697.28
GOMP	-2183.79	28	4423.57	4690.47
WEIB	-2220.28	28	4496.56	4763.46
LNOR	-2207.05	28	4470.10	4736.99
LLOG	-2182.90	28	4421.79	4688.69

Note: Linked GGS (2004) and EES (2005) data; own calculations. EXP=Standard exponential; PCE=Piece-wise constant exponential; GOMP=Gompertz; WEIB=Weibul; LNOR=Log-normal; LLOG=Log-logistic.

Table D-3: Further effects from regression Models 1.1, 1.2, and 1.3 in Table 6-3 (piece-wise constant exponential model on entry into upgrading)

continued	Model 1.1			Model 1.2			Model 1.3			Model 1.4		
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
<i>Time since completion of initial education</i>												
0 years	-6.58***	-6.99***	-6.42***	-6.47***	-6.92***	-6.28***	-6.56***	-6.98***	-6.39***	-6.48***	-6.98***	-6.39***
1 year	-5.43***	-5.54***	-5.36***	-5.33***	-5.47***	-5.21***	-5.42***	-5.52***	-5.32***	-5.34***	-5.52***	-5.32***
2 years	-4.94***	-4.63***	-5.24***	-4.83***	-4.56***	-5.09***	-4.92***	-4.61***	-5.20***	-4.85***	-4.61***	-5.20***
4 years	-5.04***	-4.61***	-5.50***	-4.93***	-4.54***	-5.35***	-5.02***	-4.59***	-5.46***	-4.95***	-4.59***	-5.46***
6 years	-5.27***	-5.28***	-5.36***	-5.16***	-5.21***	-5.22***	-5.25***	-5.26***	-5.33***	-5.19***	-5.26***	-5.33***
8 years	-5.64***	-5.61***	-5.76***	-5.53***	-5.54***	-5.62***	-5.62***	-5.59***	-5.73***	-5.55***	-5.59***	-5.73***
10 years	-6.28***	-6.28***	-6.44***	-6.18***	-6.21***	-6.30***	-6.26***	-6.25***	-6.40***	-6.21***	-6.25***	-6.40***
15 years and more	-6.74***	-7.04***	-6.77***	-6.65***	-6.97***	-6.63***	-6.73***	-7.02***	-6.75***	-6.69***	-7.02***	-6.75***
20 years and more	-7.64***	-8.44***	-7.53***	-7.51***	-8.34***	-7.36***	-7.63***	-8.43***	-7.51***	-7.59***	-8.43***	-7.51***
<i>Socio-economic origin (ref. low)</i>												
Medium	0.23**	0.20	0.26**	0.25***	0.20	0.28**	0.24***	0.21	0.26**	0.23**	0.21	0.26**
High	0.58***	0.49***	0.66***	0.58***	0.48***	0.66***	0.58***	0.48***	0.66***	0.58***	0.48***	0.66***
<i>Presence of children (ref. no children)</i>												
Married (ref. not married)	-0.28***	-0.17	-0.32**	-0.28***	-0.16	-0.32**	-0.28***	-0.16	-0.32**	-0.30***	-0.16	-0.32**
<i>Rural residence area (ref. urban residence area)</i>												
Experience of adult education (ref. no experience)	-0.19**	-0.11	-0.22*	-0.20**	-0.11	-0.23**	-0.19**	-0.11	-0.22*	-0.18*	-0.11	-0.22*
<i>Sector of economy (ref. Primary sector)</i>												
Secondary sector	-0.29***	-0.14	-0.44***	-0.29***	-0.13	-0.45***	-0.29***	-0.14	-0.44***	-0.30***	-0.14	-0.44***
Tertiary sector	-0.27**	-0.06	-0.51***	-0.27**	-0.06	-0.52***	-0.27**	-0.05	-0.52***	-0.28**	-0.05	-0.52***
<i>Entered first job (ref. did not enter first job)</i>												
Working (ref. is not working)	-0.06	0.06	-0.13	-0.06	0.06	-0.15	-0.06	0.06	-0.13	-0.04	0.06	-0.13
Previous number of jobs	0.05	0.12	0.01	0.06	0.13	0.00	0.05	0.12	0.01	0.06	0.12	0.01
Cumulative experience of long-term unemployment	-0.28*	-0.56**	-0.17	-0.30*	-0.58***	-0.17	-0.29*	-0.57***	-0.17	-0.31*	-0.57***	-0.17
squared	-0.53***	-0.41***	-0.65***	-0.55***	-0.41***	-0.67***	-0.55***	-0.40***	-0.65***	-0.49***	-0.40***	-0.65***
<i>Controls</i>												
Missing on occupational position	0.06**	0.05	0.09**	0.07**	0.05	0.09**	0.06**	0.05	0.09**	0.07**	0.05	0.09**
Missing on socio-economic origin	-0.01	-0.01	0.00	-0.01	-0.01	0.00	-0.01	-0.01	0.00	-0.01	-0.01	0.00
Missing on residence area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Missing on sector of economy	0.57	0.37	0.86	0.53	0.33	0.87	0.57	0.36	0.87	0.53	0.36	0.87
Approximate education	-0.18	-0.20	-0.19	-0.18	-0.20	-0.18	-0.18	-0.19	-0.18	-0.18	-0.19	-0.18
GGS residence area in Moscow or St. Petersburg	-0.50	-0.75	-0.37	-0.49	-0.77	-0.35	-0.49	-0.75	-0.35	-0.49	-0.75	-0.35
	0.12	0.22	0.10	0.13	0.24	0.08	0.12	0.23	0.10	0.16	0.23	0.10
	0.16	0.16	0.19	0.15	0.15	0.17	0.16	0.16	0.19	0.16	0.16	0.19
	0.22*	0.21	0.20	0.22*	0.21	0.20	0.22*	0.21	0.20	0.22*	0.21	0.20

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Variables for sector of economy and their missings refer to the current or last job.

Table D-4: Further effects from regression Models 2.1, 2.2, and 2.3 in Table 6-4 (piece-wise constant exponential model on entry into sidestepping)

continued	Model 2.1			Model 2.2			Model 2.3			Model 2.4	
	All	Men	Women	All	Men	Women	All	Men	Women	All	All
<i>Time since completion of initial education</i>											
0 years	-11.09***	-12.31***	-11.37***	-10.58***	-12.07***	-10.61***	-11.03***	-12.24***	-11.31***	-10.90***	-10.90***
1 year	-9.91***	-9.89***	-10.49***	-9.41***	-9.66***	-9.73***	-9.84***	-9.82***	-10.41***	-9.74***	-9.74***
2 years	-9.26***	-8.63***	-10.28***	-8.76***	-8.40***	-9.52***	-9.18***	-8.56***	-10.20***	-9.09***	-9.09***
4 years	-9.20***	-8.38***	-10.30***	-8.70***	-8.14***	-9.55***	-9.12***	-8.30***	-10.23***	-9.04***	-9.04***
6 years	-9.53***	-9.33***	-10.29***	-9.04***	-9.09***	-9.53***	-9.46***	-9.26***	-10.21***	-9.38***	-9.38***
8 years	-9.82***	-9.44***	-10.69***	-9.34***	-9.20***	-9.93***	-9.76***	-9.37***	-10.61***	-9.68***	-9.68***
10 years	-10.13***	-9.94***	-10.96***	-9.65***	-9.70***	-10.21***	-10.07***	-9.87***	-10.89***	-9.99***	-9.99***
15 years and more	-10.55***	-10.32***	-11.44***	-10.07***	-10.08***	-10.68***	-10.50***	-10.26***	-11.38***	-10.43***	-10.43***
20 years and more	-10.96***	-11.05***	-11.77***	-10.45***	-10.77***	-11.00***	-10.90***	-10.99***	-11.70***	-10.82***	-10.82***
<i>Socio-economic origin (ref. low)</i>											
Medium	0.12	0.46*	-0.06	0.16	0.50**	-0.04	0.13	0.49**	-0.06	0.13	0.13
High	0.24*	0.39	0.17	0.25*	0.40	0.16	0.24*	0.37	0.16	0.25*	0.25*
<i>Presence of children (ref. no children)</i>											
Married (ref. not married)	-0.09	-0.12	0.02	-0.09	-0.12	0.02	-0.08	-0.11	0.03	-0.09	-0.09
<i>Rural residence area (ref. urban residence area)</i>											
Experience of adult education (ref. no experience)	-0.25*	0.06	-0.28*	-0.25*	0.06	-0.25*	-0.25*	0.05	-0.27*	-0.22*	-0.22*
Experience of adult education (ref. no experience)	-0.60***	-0.31	-0.74***	-0.61***	-0.32	-0.75***	-0.61***	-0.34	-0.74***	-0.60***	-0.60***
Experience of adult education (ref. no experience)	1.04***	0.98***	1.08***	1.03***	0.96***	1.08***	1.03***	0.97***	1.08***	1.03***	1.03***
<i>Sector of economy (ref. Primary sector)</i>											
Secondary sector	-0.37*	-0.50*	-0.10	-0.39*	-0.52*	-0.11	-0.39*	-0.54*	-0.11	-0.35*	-0.35*
Tertiary sector	-0.09	-0.08	0.09	-0.09	-0.08	0.09	-0.09	-0.09	0.09	-0.07	-0.07
Entered first job (ref. did not enter first job)	-0.04	0.09	-0.29	-0.04	0.07	-0.29	-0.04	0.10	-0.31	-0.03	-0.03
Working (ref. is not working)	-0.86***	-1.24***	-0.66***	-0.85***	-1.22***	-0.66***	-0.85***	-1.19***	-0.66***	-0.81***	-0.81***
Previous number of jobs	0.11***	0.10	0.14***	0.12***	0.10	0.14***	0.11***	0.10	0.14***	0.12***	0.12***
Cumulative experience of long-term unemployment	0.03*	0.04	0.04*	0.04*	0.04	0.04*	0.04*	0.04	0.04*	0.04*	0.04*
Cumulative experience of long-term unemployment, squared	-0.00*	0.00	0.00	-0.00*	0.00	0.00	-0.00*	0.00	0.00	-0.00*	-0.00*
Controls											
Missing on occupational position	-12.25	-13.10	-12.06	-12.91	-13.05	-16.75	-12.24	-13.04	-12.07	-12.19	-12.19
Missing on socio-economic origin	0.30*	0.54*	0.17	0.32*	0.56*	0.18	0.31*	0.53*	0.18	0.31*	0.31*
Missing on residence area	-0.61	-13.46	-0.45	-0.61	-13.45	-0.45	-0.56	-13.33	-0.41	-0.58	-0.58
Missing on sector of economy	0.32	0.49	0.40	0.32	0.49	0.39	0.32	0.51	0.40	0.35	0.35
Approximate education	0.45*	0.32	0.55*	0.43	0.30	0.53*	0.47*	0.33	0.56*	0.48*	0.48*
GGS residence area in Moscow or St. Petersburg	0.50***	0.49*	0.53***	0.51***	0.51*	0.54***	0.50***	0.48*	0.53***	0.50***	0.50***

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Variables for sector of economy and their missings refer to the current or last job.

Appendix E Chapter 7

Figure E–1: Definition of adult education variables, a snapshot from the simulated data

idind	t_start	t_end	psv_period	ae_short	ae_long	ae_lagged	ae_long_psv
8	0	3	no	no	no	No AE	no
8	3	4	no	yes	yes	Just graduated	no
8	4	6	no	no	yes	Just graduated	no
8	6	10	no	no	yes	4–12m ago	no
8	10	16	yes	no	yes	4–12m ago	yes
8	16	28	yes	no	yes	13–24m ago	yes
8	28	64	yes	no	yes	25–60m, ago	yes
8	64	90	yes	no	yes	61–120m, ago	yes
8	90	91	yes	yes	yes	Just graduated	yes
8	91	93	yes	no	yes	Just graduated	yes
8	93	103	yes	no	yes	4–12m ago	yes
8	103	115	yes	no	yes	13–24m ago	yes
8	115	151	yes	no	yes	25–60m, ago	yes
8	151	182	yes	no	yes	61–120m, ago	yes

Note: Linked GGS (2004) and EES (2005) data; own calculations. Variable specifications: idind=individual's identification number, t_start=spell start time, t_end=spell end time, psv_period=spell refers to the post-Soviet period, ae_short=a short-term effect of adult education, ae_long= a long-term effect of adult education, ae_lagged=a lagged effect of adult education, ae_long_psv=a post-Soviet period long-term effect of adult education (used for interaction effect between post-Soviet period and a long-term effect of adult education).

Table E-1: Comparison of LR improvement test

		All			Men		Women	
		Δ	LR χ^2	p	LR χ^2	p	LR χ^2	p
Re-employment, (non-workers)								
(1)	LNG	(NOAE)	175.54	***	85.44	***	79.93	***
(2)	LNG, LNG×EDU	(NOAE)	194.76	***	100.34	***	84.90	***
(3)	LNG, LNG×EDU	(LNG)	19.23	***	14.91	**	4.97	
(4)	LNG, LNG×PRD	(NOAE)	184.17	***	91.25	***	89.63	***
(5)	LNG, LNG×PRD	(LNG)	8.64	*	5.81	+	9.70	**
(6)	LNG, LNG×F	(NOAE)	187.10	***				
(7)	LNG, LNG×F	(LNG)	11.57	**				
Upward mobility, (workers)								
(1)	LNG	(NOAE)	67.40	***	35.75	***	38.89	***
(2)	LNG, LNG×EDU	(NOAE)	75.61	***	37.07	***	48.61	***
(3)	LNG, LNG×EDU	(LNG)	8.21	+	1.32		9.72	*
(4)	LNG, LNG×PRD	(NOAE)	73.54	***	39.98	***	42.27	***
(5)	LNG, LNG×PRD	(LNG)	6.13	*	4.23		3.38	
(6)	LNG, LNG×F	(NOAE)	67.90	***				
(7)	LNG, LNG×F	(LNG)	0.49					
Downward mobility, (workers)								
(1)	LNG	(NOAE)	26.29	***	4.05		25.43	***
(2)	LNG, LNG×EDU	(NOAE)	35.41	***	11.94	+	33.40	***
(3)	LNG, LNG×EDU	(LNG)	9.12	+	7.89	+	7.97	+
(4)	LNG, LNG×PRD	(NOAE)	27.16	***	6.69		26.37	***
(5)	LNG, LNG×PRD	(LNG)	0.86		2.64		0.95	
(6)	LNG, LNG×F	(NOAE)	32.18	***				
(7)	LNG, LNG×F	(LNG)	5.88	+				

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$. Model specification: LNG=Long-term effect of adult education, EDU=Initial education level, PRD=Period; F=Female; NOAE=No effects of adult education; interaction indicated by ×.

Table E–2: Akaike’s information criterion and Bayesian information criterion

	All				Men				Women			
	<i>LL</i>	<i>DF</i>	<i>AIC</i>	<i>BIC</i>	<i>LL</i>	<i>DF</i>	<i>AIC</i>	<i>BIC</i>	<i>LL</i>	<i>DF</i>	<i>AIC</i>	<i>BIC</i>
(Re-)Employment, (non-workers)												
Model 1.1	-19,670	35	39,410	39,714	-7,176	34	14,421	14,681	-11,905	34	23,879	24,160
Model 1.2	-19,664	37	39,402	39,724								
Model 1.3	-19,660	39	39,399	39,738	-7,169	38	14,414	14,704	-11,903	38	23,882	24,196
Model 1.4	-19,666	37	39,405	39,727	-7,173	36	14,419	14,694	-11,901	36	23,873	24,171
Upward mobility, (workers)												
Model 2.1	-6,873	39	13,824	14,196	-2,494	38	5,063	5,389	-4,203	38	8,481	8,825
Model 2.2	-6,873	41	13,828	14,219								
Model 2.3	-6,869	43	13,824	14,234	-2,493	42	5,070	5,430	-4,198	42	8,479	8,860
Model 2.4	-6,870	41	13,822	14,213	-2,492	40	5,063	5,406	-4,201	40	8,482	8,844
Downward mobility, (workers)												
Model 3.1	-6,460	39	12,997	13,363	-2,003	38	4,082	4,403	-4,354	38	8,783	9,121
Model 3.2	-6,457	41	12,995	13,380								
Model 3.3	-6,455	43	12,996	13,400	-1,999	42	4,082	4,437	-4,350	42	8,783	9,156
Model 3.4	-6,459	41	13,000	13,385	-2,001	40	4,083	4,421	-4,353	40	8,786	9,142

Note: Linked GGS (2004) and EES (2005) data; own calculations.

Table E-3: Further effects from models on (re-)employment chances

continued	Model 1.1			Model 1.2		Model 1.3			Model 1.4		
	All	Men	Women	All	All	Men	Women	All	Men	Women	
<i>Duration of non-employment</i>											
0 months	-2.35***	-2.76***	-2.07***	-2.37***	-2.33***	-2.74***	-2.06***	-2.35***	-2.75***	-2.08***	
6 months	-3.74***	-4.56***	-3.17***	-3.76***	-3.72***	-4.55***	-3.16***	-3.74***	-4.55***	-3.18***	
12 months	-3.59***	-4.75***	-2.82***	-3.60***	-3.57***	-4.73***	-2.81***	-3.59***	-4.74***	-2.82***	
24 months	-3.51***	-3.75***	-3.27***	-3.53***	-3.49***	-3.73***	-3.26***	-3.51***	-3.74***	-3.27***	
60+ months	-4.64***	-5.69***	-4.00***	-4.65***	-4.61***	-5.66***	-3.99***	-4.63***	-5.67***	-4.00***	
<i>Age of LM entry (ref. 20-25)</i>											
Below 20	-0.12***	-0.12**	-0.03	-0.12***	-0.12***	-0.12**	-0.03	-0.12***	-0.11**	-0.04	
Above 25	-0.12	0.10	-0.16	-0.12	-0.11	0.12	-0.16	-0.11	0.12	-0.15	
<i>Socio-economic origin (ref. low)</i>											
Medium	0.00	0.03	-0.02	0.00	0.00	0.03	-0.02	0.00	0.03	-0.01	
High	-0.03	0.03	-0.04	-0.03	-0.03	0.04	-0.04	-0.03	0.03	-0.04	
<i>Post-soviet LM entry</i>	0.29***	0.40***	0.09	0.29***	0.29***	0.40***	0.09	0.29***	0.40***	0.09	
<i>Married</i>	-0.03	0.41***	-0.31***	-0.03	-0.03	0.40***	-0.31***	-0.03	0.40***	-0.31***	
<i>Presence of children</i>	0.08**	0.21***	-0.16***	0.08**	0.09**	0.21***	-0.16***	0.08**	0.21***	-0.17***	
<i>Rural residence area</i>	-0.05*	-0.10*	-0.03	-0.05*	-0.05*	-0.10*	-0.03	-0.05*	-0.10*	-0.03	
<i>Higher level occupational class</i>	0.04	0.03	0.05	0.04	0.03	0.03	0.05	0.04	0.01	0.05	
<i>Authoritative position</i>	0.11**	-0.05	0.11**	0.11**	0.10**	-0.07	0.11*	0.11**	-0.05	0.11**	
<i>Self-employed</i>	-0.22**	0.05	-0.31**	-0.20**	-0.20**	0.04	-0.30**	-0.22**	0.05	-0.30**	
<i>Sector of economy (ref. tertiary)</i>											
Primary	-0.13***	-0.13**	-0.01	-0.13***	-0.14***	-0.14**	-0.01	-0.13***	-0.13**	0.00	
Secondary	0.07**	0.08*	0.04	0.07**	0.06*	0.07	0.04	0.07**	0.08*	0.04	
<i>Previous N of non-working spells</i>	0.00	-0.00***	0.00	0.00	0.00	-0.00***	0.00	0.00	-0.00***	0.00	
<i>Previous labor force experience</i>	0.07***	0.09***	0.04***	0.07***	0.07***	0.09***	0.04***	0.07***	0.09***	0.04***	
<i>Type of non-employment (ref. inactive)</i>											
Unemployed	-0.60***	-0.91***	-0.41***	-0.60***	-0.60***	-0.92***	-0.41***	-0.60***	-0.91***	-0.41***	
Controls											
<i>Missing on socio-economic origin</i>	0.00	0.01	-0.02	0.00	0.01	0.02	-0.02	0.00	0.01	-0.01	
<i>Missing on residence area</i>	-0.15	-0.20	-0.15	-0.15	-0.14	-0.17	-0.14	-0.16	-0.25	-0.14	
<i>Missing on occupational class</i>	-0.49**	-0.61*	-0.29	-0.54**	-0.53**	-0.67**	-0.29	-0.46*	-0.62*	-0.29	
<i>Missing on authoritative position</i>	0.16	0.22	2.50*	0.18	0.18	0.24	2.49*	0.16	0.22	2.52*	
<i>Missing on self-employed</i>	-0.28	0.30	-3.26**	-0.24	-0.25	0.34	-3.26**	-0.30	0.31	-3.28**	
<i>Missing on sector of economy</i>	0.01	-0.10	0.08	0.01	0.01	-0.10	0.08	0.01	-0.10	0.08	
<i>Approximate education</i>	0.01	-0.11	0.11	0.01	0.02	-0.08	0.11	0.01	-0.10	0.12	
<i>GGs residence area in Moscow or St. Petersburg</i>	-0.09*	0.03	-0.14**	-0.09*	-0.09*	0.03	-0.14**	-0.09*	0.03	-0.13**	

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. LM=labor market.

Table E-4: Further effects from models on upward occupational mobility

continued	Model 2.1			Model 2.2		Model 2.3			Model 2.4		
	All	Men	Women	All		All	Men	Women	All	Men	Women
<i>Time since labor market entry</i>											
0 years	-3.73***	-3.47***	-3.78***	-3.73***		-3.75***	-3.47***	-3.80***	-3.72***	-3.46***	-3.78***
1 year	-3.72***	-3.47***	-3.70***	-3.71***		-3.73***	-3.47***	-3.72***	-3.71***	-3.46***	-3.69***
2 years	-4.12***	-4.16***	-3.89***	-4.12***		-4.14***	-4.16***	-3.91***	-4.11***	-4.15***	-3.88***
5 years	-4.68***	-4.69***	-4.44***	-4.67***		-4.69***	-4.69***	-4.47***	-4.67***	-4.68***	-4.44***
10 years	-5.05***	-5.25***	-4.73***	-5.05***		-5.07***	-5.25***	-4.76***	-5.04***	-5.23***	-4.72***
15 years	-5.29***	-5.44***	-4.98***	-5.28***		-5.31***	-5.44***	-5.02***	-5.26***	-5.41***	-4.97***
20 years	-5.45***	-5.48***	-5.20***	-5.45***		-5.47***	-5.48***	-5.23***	-5.42***	-5.44***	-5.18***
25 years and more	-5.90***	-5.97***	-5.68***	-5.89***		-5.92***	-5.97***	-5.70***	-5.86***	-5.91***	-5.65***
<i>Age of LM entry (ref. 20-25)</i>											
Below 20	0.03	0.19**	-0.09	0.03		0.02	0.19*	-0.09	0.03	0.19**	-0.09
Above 25	0.24	0.46	-0.02	0.24		0.25	0.46	-0.01	0.25	0.45	-0.02
<i>Socio-economic origin (ref. low)</i>											
Medium	0.20***	0.26**	0.15*	0.20***		0.20***	0.26**	0.15*	0.20***	0.25**	0.15*
High	0.34***	0.43***	0.31***	0.34***		0.34***	0.43***	0.31***	0.34***	0.42***	0.30***
<i>Post-soviet LM entry</i>	0.00	-0.06	0.00	0.00		0.00	-0.06	0.00	0.01	-0.05	0.00
<i>Married</i>	0.03	-0.04	0.10	0.03		0.03	-0.04	0.11*	0.03	-0.05	0.11
<i>Presence of children</i>	-0.21***	-0.04	-0.27***	-0.21***		-0.22***	-0.04	-0.27***	-0.21***	-0.04	-0.27***
<i>Rural residence area</i>	-0.14**	-0.07	-0.15*	-0.14**		-0.13**	-0.06	-0.15*	-0.14**	-0.06	-0.15*
<i>Occupational class (ref. unskilled)</i>											
Skilled	-1.37***	-2.07***	-0.71***	-1.37***		-1.36***	-2.07***	-0.70***	-1.36***	-2.06***	-0.71***
Services	-1.74***	-2.39***	-1.53***	-1.74***		-1.74***	-2.39***	-1.52***	-1.74***	-2.41***	-1.53***
Semi-professionals	-2.67***	-2.48***	-2.69***	-2.67***		-2.68***	-2.49***	-2.70***	-2.67***	-2.47***	-2.69***
Professionals	-3.82***	-3.35***	-4.05***	-3.82***		-3.83***	-3.35***	-4.07***	-3.82***	-3.35***	-4.05***
<i>Authoritative position</i>	0.04	0.04	-0.03	0.04		0.03	0.04	-0.04	0.03	0.03	-0.03
<i>Self-employed</i>	0.24*	0.23	0.13	0.24*		0.24*	0.23	0.13	0.24*	0.23	0.13
<i>Sector of economy (ref. tertiary)</i>											
Primary	-0.16*	-0.25**	-0.16	-0.16*		-0.16**	-0.25**	-0.16*	-0.15*	-0.25**	-0.15
Secondary	0.10*	0.13	-0.08	0.10*		0.10*	0.14	-0.08	0.10*	0.14	-0.08
<i>Previous N of jobs</i>	0.11***	0.13***	0.10***	0.11***		0.12***	0.13***	0.10***	0.11***	0.13***	0.10***
Controls											
<i>Experience of interruption</i>	-13.80	-12.88	-14.35	-13.80		-13.81	-13.51	-13.86	-13.81	-12.89	-14.35
<i>Missing on socio-economic origin</i>	0.06	0.09	0.04	0.06		0.05	0.09	0.04	0.05	0.09	0.04
<i>Missing on residence area</i>	-0.40	-0.42	-0.42	-0.40		-0.40	-0.42	-0.43	-0.39	-0.43	-0.42
<i>Missing on occupational class</i>	0.43	0.34	0.54	0.43		0.44*	0.35	0.54	0.43*	0.33	0.55
<i>Missing on authoritative position</i>	0.29	0.35	-13.05	0.30		0.36	0.37	-12.54	0.31	0.36	-13.06
<i>Missing on sector of economy</i>	0.08	-0.18	0.05	0.08		0.08	-0.18	0.05	0.09	-0.17	0.05
<i>Approximate education</i>	-0.13	-0.23	-0.05	-0.13		-0.13	-0.24	-0.05	-0.13	-0.23	-0.05
<i>GGs residence area in Moscow or St. Petersburg</i>	0.14*	0.06	0.14	0.15*		0.14*	0.06	0.14	0.15*	0.07	0.14

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. LM=labor market.

Table E-5: Further effects from models on downward occupational mobility

continued	Model 2.1			Model 2.2		Model 2.3			Model 2.4		
	All	Men	Women	All	All	Men	Women	All	Men	Women	
<i>Time since labor market entry</i>											
0 years	-6.80***	-6.93***	-6.42***	-6.82***	-6.82***	-7.01***	-6.41***	-6.80***	-6.94***	-6.42***	
1 year	-6.58***	-6.98***	-6.10***	-6.60***	-6.60***	-7.06***	-6.09***	-6.58***	-6.99***	-6.10***	
2 years	-6.79***	-7.13***	-6.31***	-6.81***	-6.81***	-7.21***	-6.30***	-6.79***	-7.14***	-6.31***	
5 years	-7.19***	-7.47***	-6.69***	-7.21***	-7.22***	-7.56***	-6.69***	-7.19***	-7.47***	-6.69***	
10 years	-7.56***	-7.80***	-7.07***	-7.58***	-7.59***	-7.89***	-7.06***	-7.56***	-7.80***	-7.07***	
15 years	-7.89***	-8.09***	-7.40***	-7.91***	-7.91***	-8.18***	-7.39***	-7.89***	-8.11***	-7.39***	
20 years	-8.10***	-8.37***	-7.57***	-8.11***	-8.12***	-8.45***	-7.56***	-8.10***	-8.39***	-7.56***	
25 years and more	-8.39***	-8.55***	-7.99***	-8.41***	-8.41***	-8.63***	-7.97***	-8.39***	-8.58***	-7.97***	
<i>Age of LM entry (ref. 20-25)</i>											
Below 20	0.15**	0.14	0.16**	0.14**	0.15**	0.14	0.16*	0.15**	0.13	0.16**	
Above 25	-0.30	-0.25	-0.33	-0.30	-0.30	-0.23	-0.33	-0.30	-0.24	-0.33	
<i>Socio-economic origin (ref. low)</i>											
Medium	-0.02	0.11	-0.07	-0.02	-0.02	0.12	-0.07	-0.02	0.11	-0.07	
High	-0.12*	0.01	-0.18*	-0.12*	-0.11	0.02	-0.17*	-0.12*	0.01	-0.18*	
<i>Post-soviet LM entry</i>											
	0.01	0.01	-0.05	0.01	0.01	0.02	-0.06	0.01	0.01	-0.05	
<i>Married</i>											
	-0.08	-0.43***	0.05	-0.08	-0.08	-0.43***	0.05	-0.08	-0.42***	0.05	
<i>Presence of children</i>											
	-0.22***	0.01	-0.30***	-0.22***	-0.22***	0.02	-0.30***	-0.22***	0.01	-0.30***	
<i>Rural residence area</i>											
	-0.02	0.08	-0.03	-0.02	-0.03	0.09	-0.04	-0.02	0.08	-0.03	
<i>Higher level occupational class</i>											
	0.04	0.03	0.05	0.04	0.03	0.03	0.05	0.04	0.01	0.05	
<i>Occupational class (ref. skilled)</i>											
Services	0.94***	1.57***	0.46***	0.93***	0.94***	1.57***	0.46***	0.94***	1.58***	0.46***	
Semi-professionals	1.18***	1.64***	0.76***	1.18***	1.19***	1.67***	0.76***	1.18***	1.64***	0.76***	
Professionals	1.22***	1.46***	0.91***	1.21***	1.24***	1.49***	0.91***	1.22***	1.46***	0.91***	
Managers	2.42***	2.28***	2.44***	2.41***	2.43***	2.31***	2.44***	2.42***	2.30***	2.44***	
<i>Authoritative position</i>											
Self-employed	-0.35***	-0.39***	-0.42***	-0.35***	-0.35***	-0.38***	-0.41***	-0.35***	-0.39***	-0.42***	
<i>Sector of economy (ref. tertiary)</i>											
Primary	0.01	-0.11	0.15	0.01	0.01	-0.11	0.15	0.01	-0.11	0.15	
Secondary	0.15**	0.11	0.07	0.14**	0.15**	0.11	0.07	0.15**	0.11	0.07	
<i>Previous N of jobs</i>											
	0.17***	0.17***	0.16***	0.17***	0.17***	0.17***	0.16***	0.17***	0.17***	0.16***	
Controls											
<i>Experience of interruption</i>	-13.61	-13.21	-14.25	-13.62	-13.59	-12.95	-14.23	-13.60	-13.20	-14.25	
<i>Missing on socio-economic origin</i>	0.18**	0.32**	0.12	0.18**	0.19**	0.33**	0.12	0.18**	0.33**	0.12	
<i>Missing on residence area</i>	-0.08	0.02	-0.16	-0.09	-0.08	0.04	-0.15	-0.09	0.01	-0.16	
<i>Missing on occupational class</i>	-0.10	-0.08	-0.95	-0.09	-0.10	-0.08	-0.94	-0.10	-0.08	-0.94	
<i>Missing on authoritative position</i>	-13.30	-13.04	-14.35	-13.26	-13.27	-12.78	-14.34	-13.30	-13.03	-14.35	
<i>Missing on self-employed</i>											
<i>Missing on sector of economy</i>	0.36**	0.07	0.41**	0.36**	0.37**	0.08	0.42**	0.36**	0.08	0.41**	
<i>Approximate education</i>	0.02	-0.03	0.06	0.02	0.02	-0.03	0.07	0.02	-0.02	0.07	
<i>GGs residence area in Moscow or St. Petersburg</i>	-0.01	-0.11	0.02	-0.01	-0.01	-0.11	0.03	-0.01	-0.11	0.02	

Note: Linked GGS (2004) and EES (2005) data; own calculations. Significance level: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. LM=labor market.

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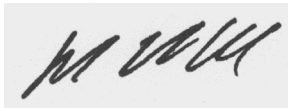
Questions? customer care@copyright.com or +1-855-239-3415 (toll free in the US) or +1-978-646-2777.

27/10/2015

Herewith I, David Bills, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Bills, D., and Kosyakova, Y. (in press). Adult education. In: G. Ritzer (Ed.) *Wiley Blackwell Encyclopedia of Sociology* (S: in press). Wiley-Blackwell, , (accepted Mai 13, 2015).

I agree with using this work as an integral part of her thesis.

A handwritten signature in black ink, appearing to read 'D. Bills', is placed on a light gray rectangular background.

(Signature)

Herewith I, Hans-Peter Blossfeld, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y., Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences at Labor Market Entry: The Effect of Changing Educational Pathways and Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 3-38). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

Blossfeld, H.-P., Skopek, J., Kosyakova, Y., Triventi, M., and Buchholz, S. (2015). Gender, Education, and Employment: Lessons Learned from the Comparative Perspective. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 347-382). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

Dämmrich, J., Kosyakova, Y., and Blossfeld, H.-P. (2016). Gender and job-related non-formal training: A comparison of 20 countries. In: *International Journal of Comparative Sociology*, (published online January 19, 2016).

Kilpi-Jakonen, E., Vono de Vilhena, D., Kosyakova, Y., Stenberg, A., and Blossfeld, H.-P. (2012). The Impact of Formal Adult Education on the Likelihood of Being Employed: a Comparative Overview. In: *Studies of Transition States and Societies*, 4 (1), S. 48–68.

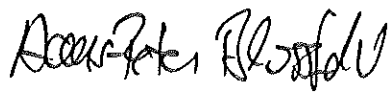
Kosyakova, Y., Dämmrich, J., and Blossfeld, H.-P. (2016). Participation in formal adult education and its impact on inequality over the life course in contemporary Russia. In: *World Studies in Education*, 17(1), (accepted for publication on February 1, 2016).

Kosyakova, Y., Kurakin, D., and Blossfeld, H.-P. (2015). Horizontal and Vertical Gender Segregation in Russia – Changes upon Labour Market Entry Before and After the Collapse of the Soviet Regime. In: *European Sociological Review*, 31(5), 573-590.

Triventi, M., Skopek, J., Kosyakova, Y., Buchholz, S., and Blossfeld, H.-P. (2015).

Gender Inequalities at Labor Market Entry: A Comparative View from *eduLIFE*
Project. In: *Comparative Social Research*, 31

I agree with using this work as an integral part of her thesis.



(Signature)

27/10/2015


Herewith I, Sandra Buchholz, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Triventi, M., Skopek, J., Kosyakova, Y., Buchholz, S., and Blossfeld, H.-P. (2015). Gender Inequalities at Labor Market Entry: A Comparative View from *eduLIFE* Project. In: *Comparative Social Research*, 31

Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y., Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences at Labor Market Entry: The Effect of Changing Educational Pathways and Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 3-38). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

Blossfeld, H.-P., Skopek, J., Kosyakova, Y., Triventi, M., and Buchholz, S. (2015). Gender, Education, and Employment: Lessons Learned from the Comparative Perspective. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 347-382). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

I agree with using this work as an integral part of her thesis.



(Signature)

06/11/2015

Herewith I, Johanna Dämmrich, confirm that I collaborated with Yuliya Kosyakova on the following articles:

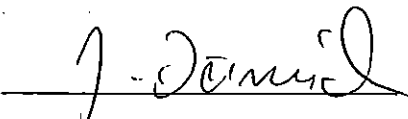
Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y., Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences at Labor Market Entry: The Effect of Changing Educational Pathways and Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 3-38). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

Dämmrich, J., Kosyakova, Y., and Blossfeld, H.-P. (2016). Gender and job-related non-formal training: A comparison of 20 countries. In: *International Journal of Comparative Sociology*, (published online January 19, 2016).

Kosyakova, Y., Dämmrich, J., and Blossfeld, H.-P. (2016). Participation in formal adult education and its impact on inequality over the life course in contemporary Russia. In: *World Studies in Education*, 17(1), (accepted for publication on February 1, 2016).

Kosyakova, Y., Saar, E. & Dämmrich, J. (forthcoming). Institutional change and gender inequalities at labour market entry: A comparison of Estonia, Russia and East and West Germany (submitted to: *Acta Sociologica*).

I agree with using this work as an integral part of her thesis.


(Signature)

27/10/2015

Herewith I, Elina Kilpi-Jakonen, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Kilpi-Jakonen, E., Vono de Vilhena, D., Kosyakova, Y., Stenberg, A., and Blossfeld, H.-P. (2012). The Impact of Formal Adult Education on the Likelihood of Being Employed: a Comparative Overview. In: *Studies of Transition States and Societies*, 4 (1), S. 48–68.

Vono de Vilhena, D., Kosyakova, Y., Kilpi-Jakonen, E., and McMullin, P. (2015). Does adult education contribute to securing non-precarious employment? A cross-national comparison. In: *Work, Employment and Society*, (published online April 17, 2015).

Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y., Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences at Labor Market Entry: The Effect of Changing Educational Pathways and Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 3-38). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

I agree with using this work as an integral part of her thesis.



(Signature)

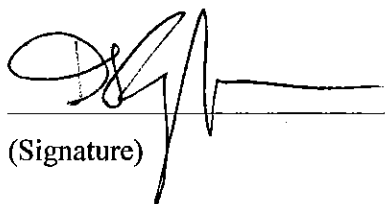
27/10/2015

Herewith I, Dmitry Kurakin, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Kosyakova, Y., Kurakin, D., and Blossfeld, H.-P. (2015). Horizontal and Vertical Gender Segregation in Russia – Changes upon Labour Market Entry Before and After the Collapse of the Soviet Regime. In: *European Sociological Review*, 31(5), 573-590.

Kosyakova, Y., and Kurakin, D. (2015). Do Institutions Matter? Occupational Gender Segregation at Labor Market Entry in Soviet and Post-Soviet Russia. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 304-324). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

I agree with using this work as an integral part of her thesis.



(Signature)

27/10/2015

Herewith I, Patricia McMullin, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Vono de Vilhena, D., Kosyakova, Y., Kilpi-Jakonen, E., and McMullin, P. (2015).

Does adult education contribute to securing non-precarious employment? A cross-national comparison. In: *Work, Employment and Society*, (published online April 17, 2015).

~~I agree with using this work as an integral part of her thesis.~~

A handwritten signature in cursive script, reading "Patricia McMullin", written over a horizontal line.

(Signature)

06/11/2015

Herewith I, Ellu Saar, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Kosyakova, Y., Saar, E. & Da□mmrich, J. (forthcoming). Institutional change and gender inequalities at labour market entry: A comparison of Estonia, Russia and East and West Germany (submitted to: *Social Forces*).

I agree with using this work as an integral part of her thesis.



(Signature)

27/10/2015

Herewith I, Jan Skopek, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Triventi, M., Skopek, J., Kosyakova, Y., Buchholz, S., and Blossfeld, H.-P. (2015).

Gender Inequalities at Labor Market Entry: A Comparative View from *eduLIFE* Project. In: *Comparative Social Research*, 31

Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y.,

Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences

at Labor Market Entry: The Effect of Changing Educational Pathways and

Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S.

Buchholz (Eds.), *Gender, Education and Employment: An International*

Comparison of School-To-Work Transitions (S: 3-38). Cheltenham,

UK/Northampton, MA, USA: Edward Elgar.

Blossfeld, H.-P., Skopek, J., Kosyakova, Y., Triventi, M., and Buchholz, S. (2015).

Gender, Education, and Employment: Lessons Learned from the Comparative

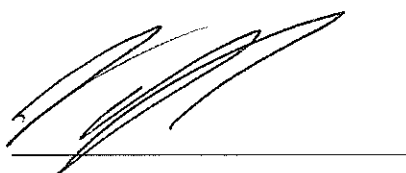
Perspective. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz

(Eds.), *Gender, Education and Employment: An International Comparison of*

School-To-Work Transitions (S: 347-382). Cheltenham, UK/Northampton, MA,

USA: Edward Elgar.

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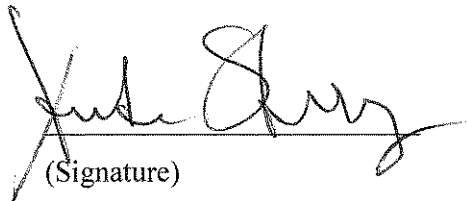
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27/10/2015

Herewith I, Anders Stenberg, confirm that I collaborated with Yuliya Kosyakova on the following articles:

Kilpi-Jakonen, E., Vono de Vilhena, D., Kosyakova, Y., Stenberg, A., and Blossfeld, H.-P. (2012). The Impact of Formal Adult Education on the Likelihood of Being Employed: a Comparative Overview. In: *Studies of Transition States and Societies*, 4 (1), S. 48–68.

I agree with using this work as an integral part of her thesis.


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27/10/2015

Herewith I, Daniela Vono de Vilhena, confirm that I collaborated with Yuliya Kosyakova on the following articles:

- Kilpi-Jakonen, E., Vono de Vilhena, D., Kosyakova, Y., Stenberg, A., and Blossfeld, H.-P. (2012). The Impact of Formal Adult Education on the Likelihood of Being Employed: a Comparative Overview. In: *Studies of Transition States and Societies*, 4 (1), S. 48–68.
- Vono de Vilhena, D., Kosyakova, Y., Kilpi-Jakonen, E., and McMullin, P. (2015). Does adult education contribute to securing non-precarious employment? A cross-national comparison. In: *Work, Employment and Society*, (published online April 17, 2015).
- Blossfeld, H.-P., Buchholz, S., Dämmrich, J., Kilpi-Jakonen, E., Kosyakova, Y., Skopek, J., Triventi, M., and Vono de Vilhena, D. (2015). Gender Differences at Labor Market Entry: The Effect of Changing Educational Pathways and Institutional Structures. In: H.-P. Blossfeld, J. Skopek, M. Triventi, and S. Buchholz (Eds.), *Gender, Education and Employment: An International Comparison of School-To-Work Transitions* (S: 3-38). Cheltenham, UK/Northampton, MA, USA: Edward Elgar.

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